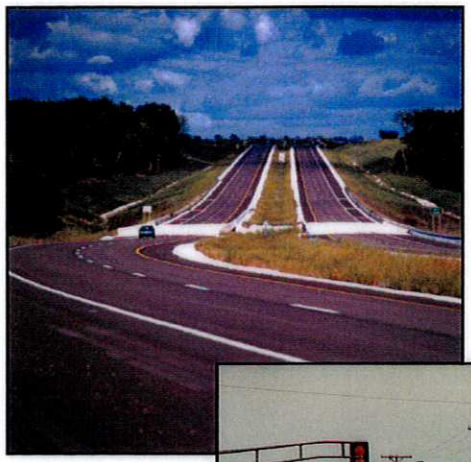

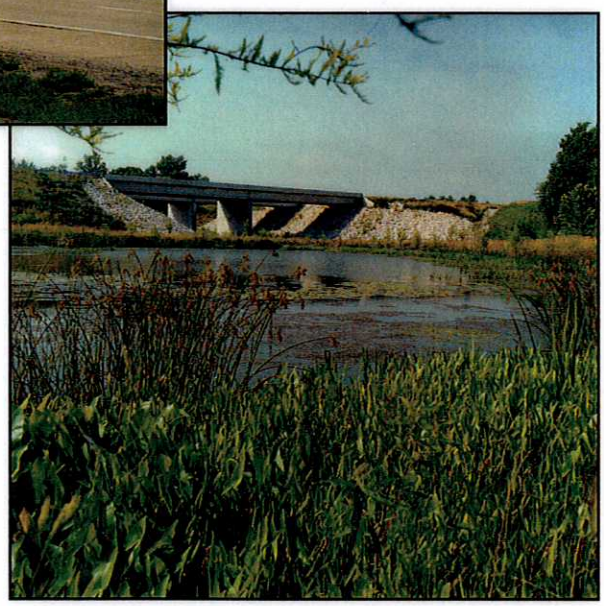

West Loop Feasibility Study
Springfield, Ill.

prepared for

SSCRPC
Springfield
Sangamon County Regional
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WEST LOOP FEASIBILITY STUDY
SPRINGFIELD, ILLINOIS

Prepared For

Springfield Sangamon County Regional Planning Commission

Prepared By

Hanson Engineers Incorporated
1525 South Sixth Street
Springfield, Illinois

June 1999

TABLE OF CONTENTS

WEST LOOP FEASIBILITY STUDY
SPRINGFIELD, ILLINOIS

TABLE OF CONTENTS

WEST LOOP FEASIBILITY STUDY
SPRINGFIELD, ILLINOIS

TABLE OF CONTENTS

WEST LOOP FEASIBILITY STUDY
SPRINGFIELD, ILLINOIS

LIST OF TABLES

LIST OF FIGURES

TABLE OF CONTENTS

WEST LOOP FEASIBILITY STUDY
SPRINGFIELD, ILLINOIS

APPENDICES

EXECUTIVE SUMMARY

West Loop Study Executive Summary

Introduction:

The land west of Veteran's Parkway is currently developing, and the existing roadway network west and north of Veterans' Parkway in Springfield consists primarily of unimproved and discontinuous county and township roads. As development progresses, the increasing traffic will overload the existing facilities. An improvement to the existing transportation system will be necessary to accommodate traffic and to support economic growth and development anticipated in the Springfield area.

The purpose of the West Loop Study is to identify the most economically, socially, and environmentally acceptable solution to the long term transportation needs on the west side of Springfield. This feasibility study evaluated a variety of roadway alternatives with the goal of identifying the major improvements that would be necessary in the planning horizon, i.e., through 2030.

New roadways can also be important in stimulating or maintaining economic growth. The availability of large tracts of land with a good roadway network often encourages new investment. It is also important that the improvement be planned before development makes it cost prohibitive to acquire the necessary right-of-way and access control.

Analysis:

The study consisted of an evaluation of three interrelated components which affect the need for and location of a west loop roadway: Land Use and Development, Traffic, and Roadway Network. These three components were analyzed concurrently since each has an effect on the other two. Present and past market demand for residential, retail, office and industrial floor space and land were analyzed. The past and present patterns of growth and development were also analyzed as indicators of how the supply of land has met development demand, and to estimate future growth as a critical factor in the traffic projection and alternatives analysis.

Traffic data from previous studies was collected and reviewed. These data included peak hour and daily counts, and any previous traffic studies in the study area. Trip generation and interaction were forecast for various land use scenarios, and each of the roadway improvement alternatives was evaluated as to its attractiveness to traffic, capacity, and accessibility.

Possible roadway corridors and facility types were developed to establish the typical section, access control requirements, right-of-way needs and design criteria. The roadway studies included collecting data in the study area which might affect the location of the proposed facility, identifying alternatives, preparing construction cost estimates, and recommendations. A detailed location design study would be required to set the alignment of a proposed new roadway.

Alternatives:

Alternatives considered that would meet the transportation needs identified for the project include no-action, using other modes of transportation, and three build alternatives. The no-action alternative would fail to meet the purpose and need for the project. A public rail transportation system does not exist within the Springfield area to provide an alternate mode of transportation. The three build alternatives include a freeway, an expressway, or a system of suburban arterial roadways.

A freeway corridor was developed connecting Illinois 104 west of Auburn with Interstate 55 near Williamsville. A freeway would be fully access controlled with interchanges at major crossroads. All railroad crossings would be grade separated, and crossroads without interchanges would be grade separated or closed.

An expressway alternative was developed connecting Illinois 104 near Auburn with Interstate 55 near Williamsville. An expressway would be partially access controlled with intersections at major crossroads and interchanges with I-72 and Illinois 97.

A suburban arterial roadway alternative would be located in the area west of Veterans between Illinois 97 (Jefferson Street) and CH40 (East Loami Road). This would consist of improved arterial roads on an approximate one-mile grid. These roads would provide improved access to the commercial area along Veterans Parkway, to the central business district, and to I-72. The arterial roadways would be partially access controlled allowing intersections at a minimum of every ¼ miles, and railroad crossings would be grade separated. This alternative also includes an extension of Cantrall Creek Road west to IL 97, which would provide direct access via Andrew Road to I-55.

Conclusions:

Land use projections indicate that approximately 11 sq. mi. of undeveloped land will be absorbed by residential, commercial, and industrial development in the metropolitan area in the 30 year planning horizon. The attached map shows the 11 sq. mi. in relation to the study corridor. Much of this area is available by infilling between many of the current scattered developments. Other land is available adjacent to existing development. The maximum benefits of controlled development will require planning and investment to provide improved access.

A freeway or expressway in the proposed corridor would represent a significant leap beyond a geographic area that has an adequate inventory of land to accommodate growth. It would likely result in leapfrog development into an area with limited infrastructure to support development. Many segments of a new freeway or expressway would not attract sufficient traffic to justify four lanes, would require a significant initial investment, and would not significantly reduce traffic on Veterans Parkway.

A system of suburban arterial roadways between Illinois 97 and CH-40, and extending west from Veterans Parkway as development occurs, is preferable because it would best achieve the purpose and need established for the project. It would provide better links to developable

land and to the many undeveloped infill sites west of Veterans Parkway, and be less likely to encourage sprawl. It would be more effective in supporting anticipated growth and development. It would also be more effective in diverting traffic from Veterans Parkway, and encourage a more efficient use of land and infrastructure. Furthermore, arterial roadways can be built in increments as development occurs.

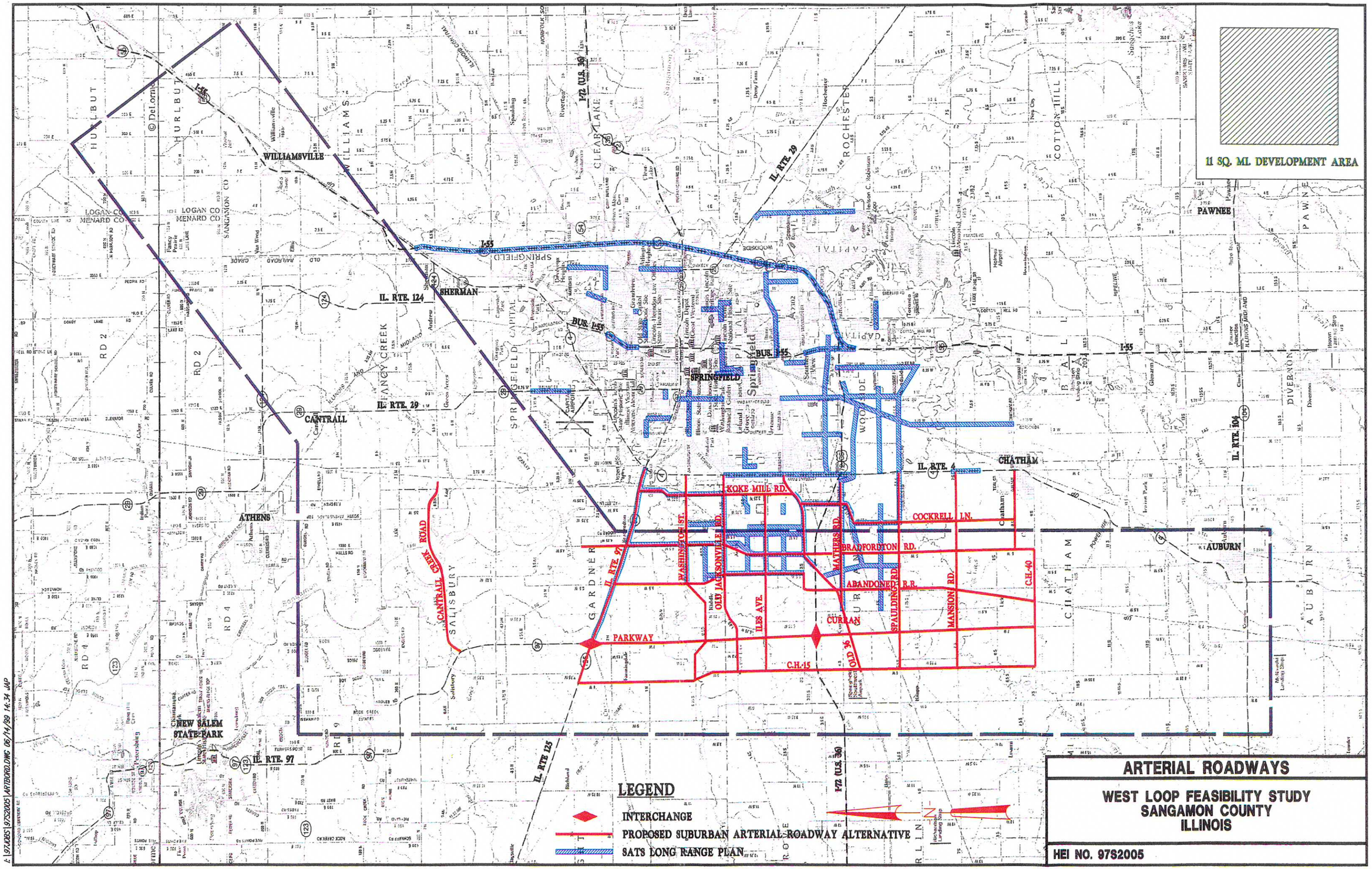
Although not part of this study, the MacArthur extension improvement will provide improved access to approximately 3.9 square miles of undeveloped land, almost one third of the total that will be required by 2030.

Recommendation:

Based on the information presented, the suburban arterial roadway alternative is the recommended alternative for the west loop improvement. The study affirms the areas planning efforts to develop an arterial roadway network on the west side.

The SSCRPC, the City, and the County should continue to move aggressively to reserve the necessary right-of-way for construction of arterial roadways west of Veterans Parkway. These roadways should be included in the long range transportation plan and the arterial roadway network plan, and should be included in any platted subdivisions in the area.

The City and County should insure that further zoning and development decisions are in accordance with the Comprehensive Plan. They should also adopt access management policies, which limit strip developments along highways, minimize curb cuts, and require master planning for large tracts of land. An access management policy for arterial roadways can improve safety, reduce congestion and delays, and promote desirable land use patterns by concentrating access to roadways at intersections rather than allowing multiple driveway access.



ARTERIAL ROADWAYS

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

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SECTION 1.0

INTRODUCTION, PURPOSE, AND NEED

SECTION 1.0
INTRODUCTION, PURPOSE AND NEED

1.1 DESCRIPTION AND LOCATION OF THE PROJECT

The project consists of identifying potential improvements to the existing roadway system west and north of Springfield, Illinois (see Figure 1.1). The study area for the project begins west of Auburn and follows a 5-mile-wide corridor north along the far western edge of Springfield before shifting northeast near Cantrall and ending at Williamsville. The location of this project study area within Sangamon County is shown in Figure 1.2. The study area in relation to city limits is shown in Figure 1.3.

1.2 PURPOSE OF THE STUDY

In 1998 the Springfield Sangamon County Regional Planning Commission (SSCRPC) retained Hanson Engineers to assist in identifying the most economically, socially and environmentally acceptable solution to the transportation needs within the study area. Planning studies for Veterans Parkway, the major artery on Springfield's west and north sides, were completed in the 1960s. The city's development has now moved west of Veterans Parkway, and SSCRPC recognized the need to identify the next major roadway corridor west and north of Veterans Parkway. It is important to identify and prepare roadway corridors before development occurs. An identified corridor will allow for coordinated planning of land use and development within the study area.

This feasibility study evaluates a variety of roadway alternatives with the goal of identifying the major improvements that will be necessary in the planning horizon, i.e., through 2030. It is important to note that any attempt to forecast the transportation needs of Springfield 30 years in the future must be based on a variety of assumptions and estimates, any of which may change significantly in that time frame. Anticipated changes in population growth and distribution,

available transportation modes, and even fuel prices could drastically affect the needs of the community and the recommendations of this study.

1.3 PURPOSE AND NEED FOR THE PROJECT

1.3.1 Purpose of the Project

The purpose of this project is to improve access to developing and undeveloped land in the area west and north of Springfield.

1.3.2 Need for the Project

The land west of Veteran's Parkway is currently developing. Based on Springfield Comprehensive Plan 2010, this development will continue for light commercial, residential, recreational, and industrial uses.

The existing roadway network west and north of Veteran's Parkway in Springfield consists primarily of unimproved and discontinuous county and township roads. As development progresses, the increasing traffic will overload the existing facilities. An improvement to the existing transportation system will be necessary to accommodate traffic and to support economic growth and development anticipated in the Springfield area.

New roadways can also be important in stimulating or maintaining economic growth. The availability of large tracts of relatively inexpensive land with a good roadway network often encourages new investment.

In addition, rapid commercial growth along Veteran's Parkway has caused congestion to increase, particularly at intersections. A new facility might reduce traffic on Veteran's Parkway.

It is important that the improvement be planned before development makes it cost prohibitive to acquire the necessary right-of-way and access control. Controlling access is important to allow planned roadways to carry high traffic volumes without the safety and service problems associated with numerous curb cuts. Roadways can also be used by area planners to guide development into the most desirable areas.

1.4 STUDY PROCESS

The study consisted of an evaluation of three interrelated components which affect the need for and location of a west loop roadway:

- Land Use and Development
- Traffic
- Roadway Network

These three components were analyzed concurrently since each can have a significant effect on the other two. Growth and development occur as land use changes from agricultural to more intensive uses, and this development generates traffic on the roadway system. The volume of traffic is determined to a large extent by the type of land use (commercial, residential) and the roadway facilities that are available. Roadways themselves frequently generate development, and in consequence, traffic. This study is an integrated evaluation of these components to determine the need for a new roadway west and north of Springfield.

1.4.1 Land Use and Development

Present and past market demand for residential, retail, office and industrial floor space and land were analyzed. Other market and economic factors likely to influence the future demand for each land use were identified. This information was used to estimate market demand for various land uses over the 30 year planning horizon.

The past and present patterns of growth and development were examined as an indicator of how the supply of land has met development demand. In addition, those geographic areas where physical conditions are best suited to accommodate development were identified.

Interviews were conducted with key persons knowledgeable about development in the metropolitan area, including representatives of real estate, development, and financial industries, as well as selected public sector representatives.

Estimates were made of how much land will likely be absorbed by development in the study area during the 30 year planning horizon. The number of jobs and households in the study area was also estimated.

The complete evaluation of market demand is included as Appendix A.

1.4.2 Traffic

Available traffic data from previous studies were collected and reviewed. These data included peak hour and daily counts, and any previous traffic studies in the study area.

Trip generation and distribution rates for the region were developed using the existing traffic simulation model and published national data. The trip generation and interaction were forecast for various land use scenarios.

Each of the roadway improvement alternatives was evaluated as to its attractiveness to traffic, capacity, and accessibility. Traffic volumes were then forecast for the study year by applying the evaluation criteria to the trip tables. Trips that might be diverted to the new roadway were included. The complete traffic study is included in Appendix B.

1.4.3 Roadway Network

Possible roadway corridors and facility types were developed to establish the typical section, access control requirements, right of way needs and design criteria. Specific alignments for new roadways were not determined. Approximate corridors were established to assist in the land use and traffic studies, but these corridors do not indicate a specific roadway location. Issues such as logical termini, potential interchange and intersection locations, grade separations and other pertinent engineering aspects were considered. A detailed location design study is required to set the alignment of a proposed new roadway.

Environmental studies were undertaken to identify potential environmental concerns or sensitive resources in the study area so they can be accounted for in the planning for a future transportation facility. The studies were limited to the following areas of concern:

- Hazardous Waste/Contaminated Properties
- Threatened and Endangered Species
- Wetlands and Floodplains
- Agricultural Land
- 4(f) and 6(f) Properties
- Known Cultural Resources
- Environmental Justice

The roadway studies included collecting data in the study area which might affect the location of the proposed facility, identifying alternatives, preparing construction cost estimates, and recommendations.

1.5 PROJECT STATUS

The SSCRPC initiated this feasibility study in June 1998. The feasibility report is anticipated to be completed in June 1999. This project is not yet included in the Springfield Comprehensive Plan, 2010.

PROJECT LOCATION MAP

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005 **FIGURE 1.1**

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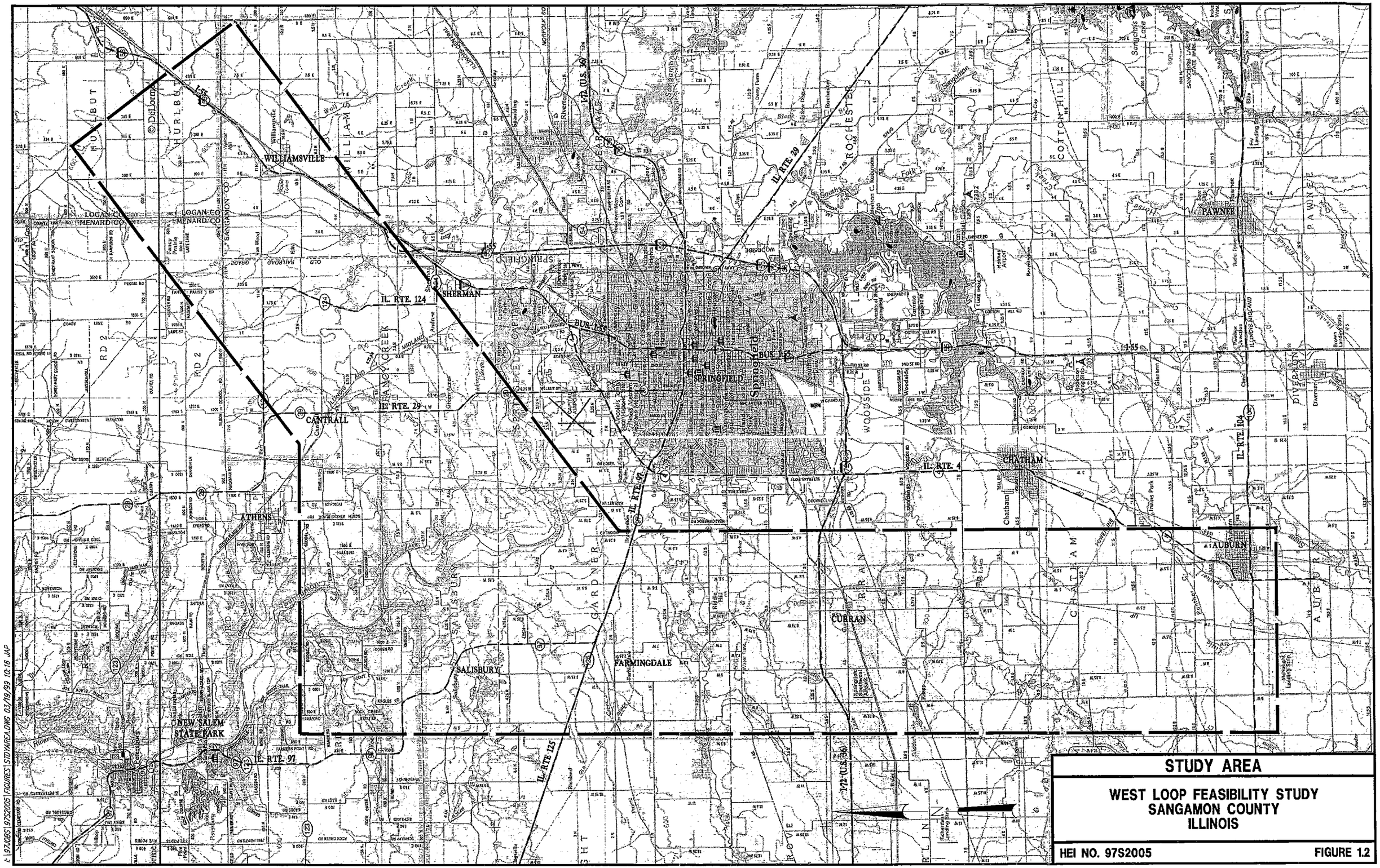

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STUDY AREA

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

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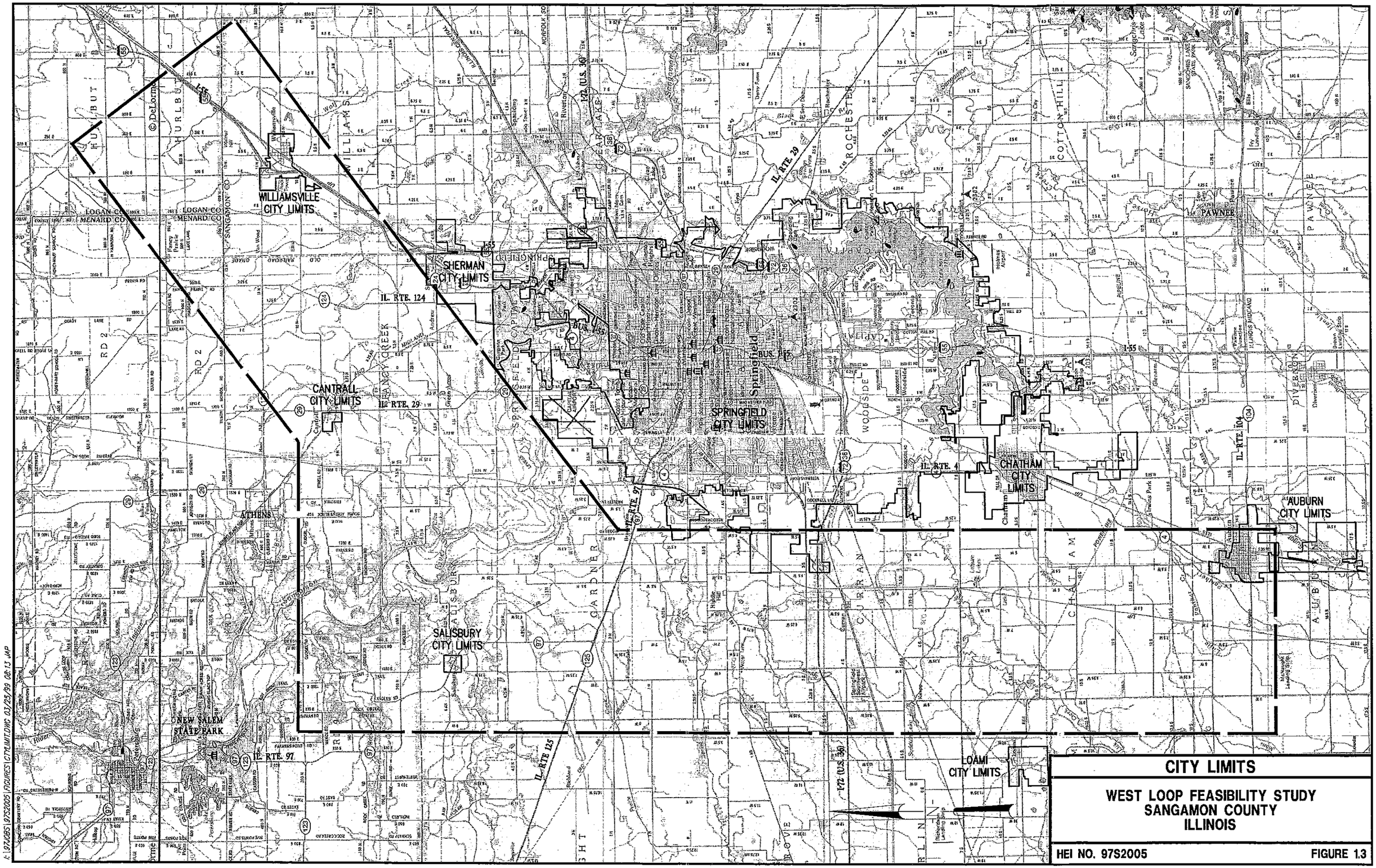
FIGURE 1.2



CITY LIMITS

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

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SECTION 2.0

EXISTING SETTING/CONDITION

SECTION 2.0
EXISTING SETTING/CONDITION

2.1 EXISTING ROADWAY CONDITIONS

Two major interstates and six state highways traverse the study area. These roadways are shown in Figure 1.2. Interstate 55 is a major north-south connection between the cities of St. Louis and Chicago, and Interstate 72 (U.S. 36) is a major east-west connection across Central Illinois. Illinois 104, Illinois 4, Illinois 125, Illinois 97, Illinois 29, and Illinois 124 are state highways within the study area. Local traffic in the study area is also served by city streets, county highways, and township roads. The 1997 average daily traffic (ADT) for the interstates and state highways is shown in Table 2.1.

Table 2.1 - 1997 ADT for Interstates and State Highways

Interstate/Highway	1997 ADT (2-way)
Interstate 55	28,600-46,700
Interstate 72 (U.S. 36)	11,500-27,600
Illinois 104	2,600-2,900
Illinois 4	7,100-35,500
Illinois 125	5,600-6,500
Illinois 97	4,650-16,000
Illinois 29	8,200-22,900
Illinois 124	1,100-5,100

2.2 RAILROADS

There are four active railroad corridors in the study area and one abandoned railroad corridor. The four active lines are owned and operated by the Norfolk Southern, Union Pacific. C&IM and Gateway Western railroads. The abandoned line has been protected by a Certificate of Interim Trail Use. This certificate protects the corridor for trail use. Improvement alternatives crossing these railroads would be grade separated. See Figure 2.1.

2.3 AIRPORTS

There is one airport in the study area with scheduled passenger service: Capital Airport located north of Springfield on Illinois 29.

2.4 UTILITIES

A number of utility facilities, including underground pipelines and overhead high voltage power lines, are located within the study area (see Figure 2.2).

2.5 LAND USE

Most of the land in the study area is currently in agricultural production, with some scattered residential development, and isolated areas of commercial development at some major road intersections. Springfield last updated its Comprehensive Lane Use Plan in 1991. This plan projected land use to 2010, and does not extend to the west loop study area.

2.6 ENVIRONMENTAL CONDITIONS

2.6.1 Socio-Economic Characteristics

A brief review of the socio-economic characteristics of the study corridor was completed to aid in determining areas which may have a high concentration of minority or low income persons. The socio-economic review was generalized to Sangamon County since it comprises the majority of the study corridor. The socio-economic data were taken from the 1998 Illinois Statistical Abstract published by the University of Illinois at Urban-Champaign. Rural residents comprise 21.7 percent of the total population and urban residents account for 78.3 percent. Whites account for approximately 89.1 percent of the county's population compared to a state average of 72.4 percent. Blacks account for 8.8 percent, followed by Asian and Pacific Islander at 1 percent, Hispanics at 0.8 percent, and American Indians at 0.2 percent. The state averages are 15.3 percent, 3.2 percent, 9 percent, and 0.2 percent respectively. Recognized census minority groups account for 10.8 percent of the Sangamon County population compared to a 27.5 percent average for the state.

Sangamon County has a poverty rate of 10.7 percent, less than the state average of 13.4 percent. The median income for the county is $34,694, approximately $1,100 higher than the median income for the entire state. The state unemployment rate is 4.7 percent, while Sangamon County posts a smaller average at 4.26 percent. The corridor is mostly agricultural land. Farm employment for the county totals 1,343 individuals.

The rural nature of the corridor precludes concentrations of individuals which may evoke concerns about environmental justice. The U.S. Department of Transportation's (DOT's) final Order To Address Environmental Justice in Minority Populations and Low-Income Populations was published in the Federal Register on April 15, 1997. This Order is to be used by DOT to comply with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," dated February 11, 1994.

Technical Report 1992(1)]. This portion of the river has a water quality rating of "good" according to The Conditions of Illinois Water Resources 1998 (IEPA).

The corridor also contains several smaller bodies of water which have not been rated by the IEPA. Many of these are associated with the numerous streams and creeks in the northern end of the corridor. Specific information is not available for these water bodies, but they typically receive farmland runoff which contains herbicides and suspended solids which lower water quality.

2.7 SENSITIVE AREAS

2.7.1 Floodplains

Flood plains provide important wildlife habitat, food chain support, nutrient retention and removal through plant uptake, erosion control through sediment trapping, and flood desynchronization. Construction within the regulatory, or 100-year flood plain, is regulated under multiple legal authorities, including:

- Executive Order 11988, Flood Plain Management
- U.S. Water Resources Council's Flood Plain Management Guidelines for Implementing Executive Order 11988.
- U.S. Department of Transportation Order 5650.2, Protection and Management of Flood Plains.
- Federal Highway Administration regulations on Location and Hydraulic Design of Encroachments on Flood Plains (23 CFR 650A).
- Title 92 Ill. Admin. Code 708, implementing Sections 23, 29, and 30 of the Rivers, Lakes, and Streams Act, 615 ILCS 5/23, 29a, and 30.

Special efforts must be made during the development of a Federally funded/regulated project to:

- encourage a broad and unified effort to prevent uneconomic, hazardous, or incompatible use and development of flood plains;
- avoid longitudinal encroachments, where practical;
- avoid significant encroachments, where practical;
- minimize impacts of actions which adversely affect base flood plains;
- restore and preserve the natural and beneficial flood plain values that are adversely impacted by Federally funded or regulated actions;
- avoid support of incompatible flood plain development; and
- be consistent with the intent of the Standards and Criteria of the National Flood Insurance Program.

In Illinois, flood plain encroachment must be coordinated with the Illinois Department of Natural Resources Office of Water Resources. According to the Federal Emergency Management Agency (FEMA) Flood Hazard Boundary Maps (FHMB) for Sangamon County, the study area includes delineated floodplains along the Sangamon River, Cantrall Creek, Fancy Creek, Spring Creek, Little Panther Creek, and South Fork as shown in Figure 2.3.

2.7.2 Wetlands

Wetlands provide a number of benefits including flood storage and conveyance, ground water recharge, erosion reduction and sediment control, pollution control and wildlife habitat. Impacts to wetlands are regulated under Section 404 of the Clean Water Act. In addition, highway projects must comply with Executive Order 11990 regarding protection of wetlands. Within Illinois, state funded or permitted projects must also conform with the requirements of the State Interagency Wetland Policy Act of 1989. Permitting and mitigation of wetland impacts from highway construction must be coordinated through the U.S. Army Corps of Engineers and the Illinois Department of Natural Resources.

According to the National Wetlands Inventory (NWI) developed by the U.S. Department of the Interior's Fish and Wildlife Service, small areas of potential wetlands are located along the Sangamon River, Spring Creek, and other creeks, and in isolated uplands as shown in Figure 2.4. Other isolated wetlands may also be present. Field surveys will be required to confirm the distribution and extent of wetlands that would be impacted by a specific alignment within the study corridor.

2.7.3 Natural Areas and Parks

49 USC 303, commonly known as Section 4(f) of the Department of Transportation Act of 1966 (Public Law 89-665), provides that the Secretary of the U.S. Department of Transportation:

> *. . . may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, recreation area, refuge, or site) only if:*
>
> *(1) there is no feasible and prudent alternative to using that land; and*
>
> *(2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.*

Impacts to Section 4(f) lands require submittal of a separate evaluation, which must be approved by the Federal Highway Administration.

In addition, 16 USC 4601-8(f)(3), commonly known as Section 6(f) of the Land and Water Conservation Fund Act of 1965 (Public Law 88-578), requires that:

> *. . . No property acquired or developed with assistance under this section or Section 1010 of the Urban Park and Recreation Recovery Act of 1978) shall, without the approval of the*

Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive Statewide outdoor recreation plan and only upon such conditions as he deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location.

Special procedures, similar to those applicable under Section 6(f), are required when lands which have Open Space Land Acquisition and Development (OSLAD) grant program funds involved in their purchase or development will be converted to other than public outdoor recreational uses.

The OSLAD program is a State-funded grant program authorized by the Open Space Lands Acquisition and Development Act (525 ILCS 35/1, et seq.). Illinois Administrative Code provisions for the OSLAD grant program (Ill Adm Code 17 Part 3025) incorporate by reference essentially the same compliance procedures as required for the Land and Water Conservation Fund (LAWCON) grant program.

Impacts to Section 6(f) properties must be coordinated through the regional director of the National Park Service. Impacts to OSLAD resources require coordination with the Illinois Department of Natural Resources.

The Sangamon County Conservation Area is located along the Sangamon River at the Menard County line. Springfield's proposed "West 190" park is located north of the Wabash Avenue interchange with Interstate 72. The Rotary Park is located midway between Wabash Avenue and Iles Avenue on the east edge of the corridor. Camp Cilca is located west of Andrew Lane along the Sangamon River, and Williamsville Park is located east of Interstate 55 along Wolf Creek. See Figure 2.5.

The Sangamon River-Petersburg Illinois Natural Area Inventory site crosses the study corridor in Township 17N, Range 6W, Sections 9, 16 and 21. The Sangamon River-Petersburg

site is/was an area of high mussel diversity and historically provided habitat for the Lake sturgeon (*Acipenser fulvescens*) a large fish which was formerly abundant in Illinois. Its numbers have declined significantly since Euroamerican settlement, and it is currently listed as threatened in the State of Illinois.

2.7.4 Threatened and Endangered Species Habitat

In the development of a project, special studies and coordination are required when the action may affect Federally-listed threatened or endangered species. Studies and coordination also are required for actions that may adversely impact State-listed species or an area included on, or published as a candidate for inclusion on, the Illinois Natural Areas Inventory. Legal authority for these requirements is given in:

- 16 USC 1536(a)-(d) of the Federal Endangered Species Act of 1973 (Public Law 93-205).
- 50 CFR 402, Procedures of Interagency Cooperation – Endangered Species Act of 1973, as Amended.
- State Executive Order Number 7 (1985), Protection of Endangered Species and Natural Areas.
- Section 11 of the Illinois Endangered Species Protection Act (520 ILCS 10/1, et seq).

Impacts to Federally-listed threatened or endangered species must be coordinated with the U.S. Fish and Wildlife Service; impacts to state listed species are coordinated with the Illinois Department of Natural Resources.

According to the Illinois Department of Natural Resources' Natural Heritage Database, there are five known occurrences of state protected species within the study corridor. The state-threatened bird, Loggerhead shrike (*Lanius ludovicianus*), has been recorded from Township 14N, Range 6W, Sections 4 and 5, and Township 15N, Range 6W, Section 32 and 33. In addition, a one-half mile breeding buffer has been assigned to this occurrence. A breeding buffer

indicates that the Loggerhead shrike mating habits have been observed in this area, but the actual nesting site could not be located.

The state-threatened bird, Brown Creeper (*Certhia americana*), a bird, has been recorded in Township 15N, Range 6W, Sections 25 and 26 near Lick Creek. The state-threatened Common barn owl (*Tyto alba*) has been recorded in Township 17N, Range 6W, Section 8. The state endangered bird, Least bittern (*Ixobrychus exilis*), and state-threatened bird, Pied-billed grebe (*Podilymbus podiceps*) have also been recorded for the reservoir off of Wolf Creek in Township 17N, Range 4W, Section 3.

2.7.5 Waste Sites or Landfills

The policy of the Federal Highway Administration and the Illinois Department of Transportation is to avoid acquiring contaminated property in order to avoid potential liability under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 U.S.C. 9601-75.

The study corridor does not contain any hazardous waste sites included in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) as of February 22, 1999. There are three sites included on the EPA's No Further Remedial Action Planned (NFRAP) database, which is comprised of sites that have been removed from CERCLIS, which may be located in the northern end of the corridor. The first site is Mapco Inc., located near Athens, in Menard County. The next site is Kaiser Estech, located along Route 29 in Cantrall. The final site is the Buerkett Airport Landfill on North Walnut Street in Springfield.

Preliminary Illinois State Geological Survey (ISGS) data indicate the possible presence of thirteen landfill sites within the study corridor. Four sites (Auburn Municipal, City of Auburn, Illinois Central Gulf Railroad, and Auburn Township) are located near Auburn in Township 13N, Range 6W, Sections 3, 15, and 22. Two landfill sites, Robert L. Solomon and Illinois Terminal

Railroad, are located in Township 14N, Range W, Section 35. The Rhodes landfill site is located in Township 15N, Range 6W, Township 27 near New Berlin. The Francis Strode site is located in Township 17N, Range 5W, Section 29. The Gardner Township Landfill is located in Township 16N, Range 6W, Section 11. The ISGS data do not provide a location for the Olson landfill near Salisbury. The Lane Walton and Roy Thomas landfills are located in Township 16N, Range 5W, Sections 4 and 7 respectively. The final site, Buerkett #2, is located in Township 15N, Range 5W, Section 1. The ISGS data indicate that most of these landfills contain nonhazardous waste, but avoidance of these landfills is a priority in the study due to the unknown variables that may be present. Detailed information on the waste sites and landfills within the corridor is not available at this time. As alignments are selected for further study, site specific information will be obtained to determine the need for further investigation of potentially contaminated sites.

2.7.6 Agricultural Land

The conversion of farmland to non-farmland uses is an important consideration for highway projects in rural areas. For alignment locations outside of the 1.5 mile planning area of cities with approved comprehensive plans, coordination is required with the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) and/or the Illinois Department of Agriculture (IDOA) to evaluate the impacts on farmland and obtain the views of those agencies on alternatives to the proposed action. Legal authority for these requirements is found in:

- 7 USC 4201-4209, Farmland Protection Policy Act of 1981 (Public Law 97-98).
- 7 CFR 658, Farmland Protection Policy.
- Farmland Preservation Act, 505 ILCS 75/1 et seq.
- State Executive Order No. 4 (1980), Preservation of Illinois Farmland.
- Illinois Department of Transportation, Agriculture Land Preservation Policy.
- Cooperative Working Agreement between the Illinois Department of Agriculture and the Illinois Department of Transportation on Farmland Preservation.
- Title 8, Ill. Admin. Code 700, Farmland Preservation Act.

The general soil associations present within the study corridor include Ipava-Tama-Sable and Ipava-Virden. These lands are well suited for agriculture and are dominated by the following soil types: Ipava silt loam, Virden silt loam, Hartsburg silty clay loam, Sable silt loam, and various Sawmill soils. The majority of the corridor, approximately 80 to 85 percent is classified as prime farmland. The prime soils are generally located on the level areas away from stream drainages and other sloping areas. The northern end of the corridor is limited in its prime farmland due to the Sangamon River drainage. Several areas of important farmland are included in the corridor as well. These areas are typically found on slopes associated with drainages.

2.7.7 Known Cultural Resources

Historic resources, including historic structures and historic and prehistoric archaeological sites, are protected under the following federal authorities:

- 16 USC 470f, Section 106 of the National Historic Preservation Act of 1966, as amended.
- 16 USC 470h-2, Section 110(f) of the National Historic Preservation Act of 1966, as amended.
- Executive Order 11593, Protection and Enhancement of the Cultural Environment.
- 23 USC 138 and 49 USC 303, Section 4(f) of the Department of Transportation Act of 1966.

Coordination is required with the Illinois Historic Preservation Agency for impacts to historic resources.

The Illinois Archaeological Site (IAS) files were reviewed for the presence of known archaeological sites within the study corridor. The northern end of the corridor contains approximately eight known archaeological sites (located during previous Phase I surveys), most associated with the Sangamon River. An isolated site is located north of Thayer at the extreme

southern end of the study corridor. There are also numerous isolated finds scattered along the Sangamon River basin. The Sangamon River provides good potential for the presence of additional archaeological resources. Selected alignments will require field surveys to identify specific sites.

2.8 COLLECTED DATA

A number of public service districts would be encountered and potentially impacted by some alternatives and a number of facilities may also be impacted by some alternatives. Exact locations of these facilities within incorporated areas were not determined, but will need to be, when specific alignments are narrowed down in the location study phase of any roadway improvements. The districts and facilities are described below.

2.8.1 Schools

The study area is served by eight school districts: Auburn Unit School District 10, Waverly Unit School District 6, Ball-Chatham Unit School District 5, New Berlin Unit School District 16, Springfield Unit School District 186, Pleasant Plains Unit School District 8, Athens Unit School District 213, and Williamsville Unit School District 15. See Figure 2.6.

2.8.2 Fire Protection

Fire protection is provided by local fire districts. Fire stations are located in each of the districts of Springfield, Fancy Creek, Pleasant Plains, New Berlin, Loami, Auburn, Chatham, Williamsville, Sherman, Athens, and Waverly.

2.8.3 Churches

Many churches are located in the incorporated areas within the study area.

2.8.4 Cemeteries

Twelve registered cemeteries are located within the study area and shown in Figure 2.5. These cemeteries are: Oak Grove, Campbell (2), McGinnis, Shelton, Young, Old Salem, Morgan, Farmingdale, Brittin, Stewart, and Fancy Creek. Other small, isolated historical cemeteries may also exist within the study area.

2.8.5 Ambulance Service

Ambulance service is provided by CEMED, Athens/Fancy Creek, Pleasant Plains, New Berlin, Loami, Auburn, Chatham, Williamsville, Sherman, and Waverly.

2.9 ALIGNMENT CONTROLS

Some environmental and socio-economic features can function as alignment controls. A roadway alignment adversely affecting these features would likely result in extremely high construction or land acquisition costs, significant environmental or socio-economic impacts, and/or difficulty in obtaining right-of-way. Potential alignment controls identified with the West Loop study area are:

- Cemeteries
- Floodplains
- Wetlands
- Parks and natural areas

Specific alignments were not identified as part of this study, but generalized corridors were established to assist in the land use and traffic studies. A detailed location study would be required to establish specific alignments, and would need to consider the alignment controls listed above.

The United States Environmental Protection Agency has identified containment of urban sprawl as a federal environmental priority for the 21st Century. Infrastructure improvements which would tend to facilitate sprawl, such as construction of "loop" roadway systems around metropolitan areas, will likely be subject to additional environmental scrutiny. This may become a significant environmental constraint for this project.

2.10 DEMOGRAPHIC FACTORS AND TRENDS

Sangamon County's population is growing at a rate of 5.28 percent per decade. The fastest growing census tracts are located in the south and southwest portions of the county. Growth should continue at this rate through 2010 and then slow to a rate of 4.0 percent through 2030. The 2030 population is likely to be approximately 213,855. This translates into an increase of about 15,400 households from 2000 to 2030.

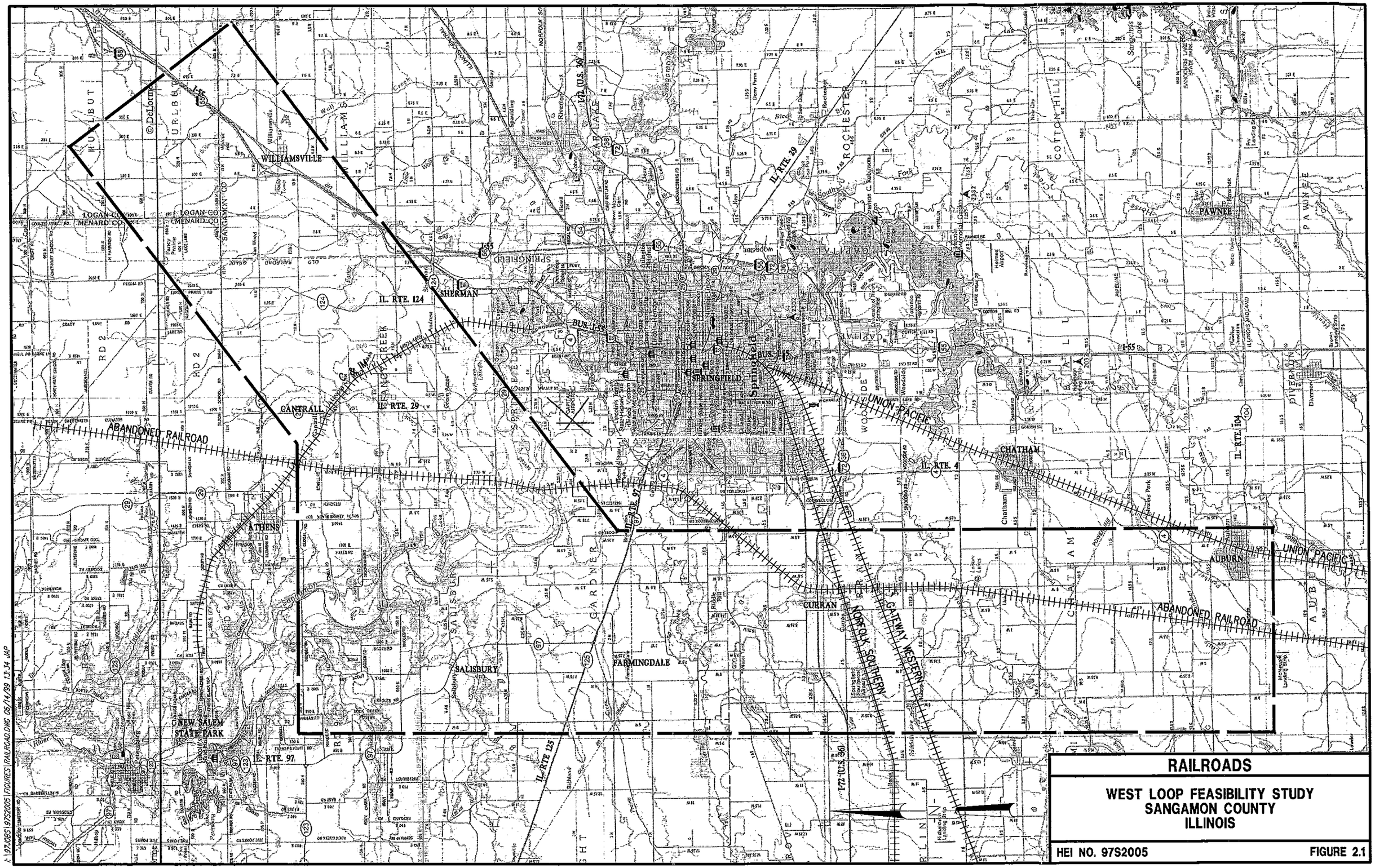
Between 1990 and 1997 Sangamon County experienced growth rates in new housing permits that exceeded household growth. These permits were concentrated in the area immediately west of Veteran's Parkway and southwest of the Interstate 72/Interstate 55 interchange. Growth in housing permits is predicted to slow down to better reflect the growth in jobs, population and the dilution of previous pent up demand.

Employment has grown in Springfield. The area is characterized by high concentrations of employment in the public, service, and retail trade sectors. Between 1992 and 1997 non-agricultural employment grew by 4.1 percent. Between 2000 and 2030 the Springfield labor force is expected to grow by 26 percent, or an annual average of just less than 1 percent per year.

Public, service and retail sectors are predicted to continue to have the highest growth, and will continue to significantly influence development patterns. A low base of manufacturing and wholesale trade jobs will cause slow land absorption rates for industrial use.

The predominant land use in the corridor is agricultural, with a number of scattered areas of residential and some commercial and light industrial. The recent development of the area has been characterized by westward extension of low density residential and commercial settlement. In many areas leapfrog development has left large areas of undeveloped land closer to the city. This development has preceded construction of improved roadways to accommodate the increased traffic, and has required the extension of utility lines to serve these outlying areas.

The total area likely to be converted from current agricultural or other land use to residential, commercial or industrial use by 2030 is approximately 7,000 acres. This area, in comparison to the study area, and in comparison to the current developed area of Springfield is shown in Figure 2.7. Residential, commercial and industrial development will be distributed throughout the metropolitan area, but will be predominantly on the south and west sides due to geographic constraints to the north and east.



RAILROADS

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005 — FIGURE 2.1

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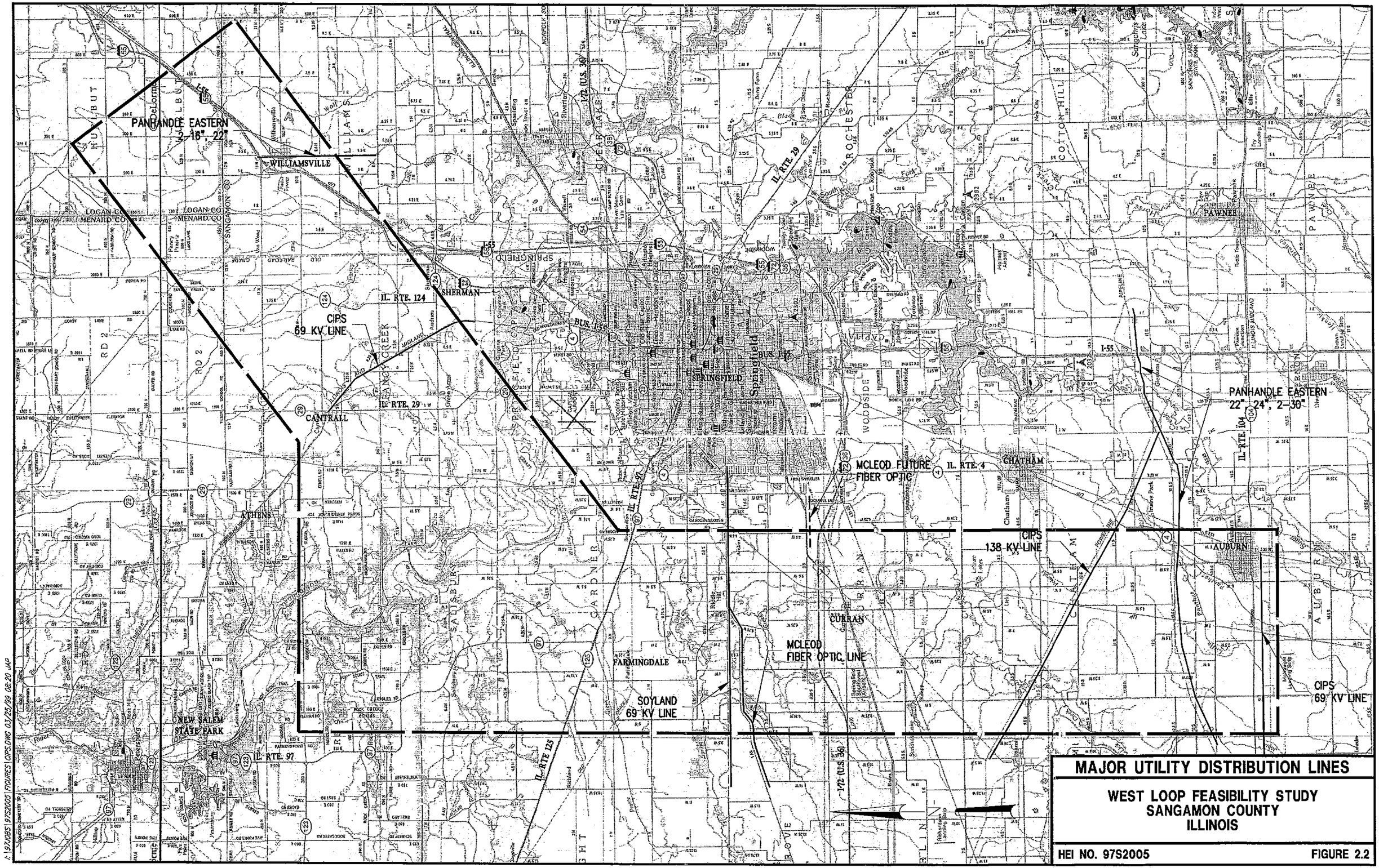

MAJOR UTILITY DISTRIBUTION LINES

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

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FIGURE 2.2

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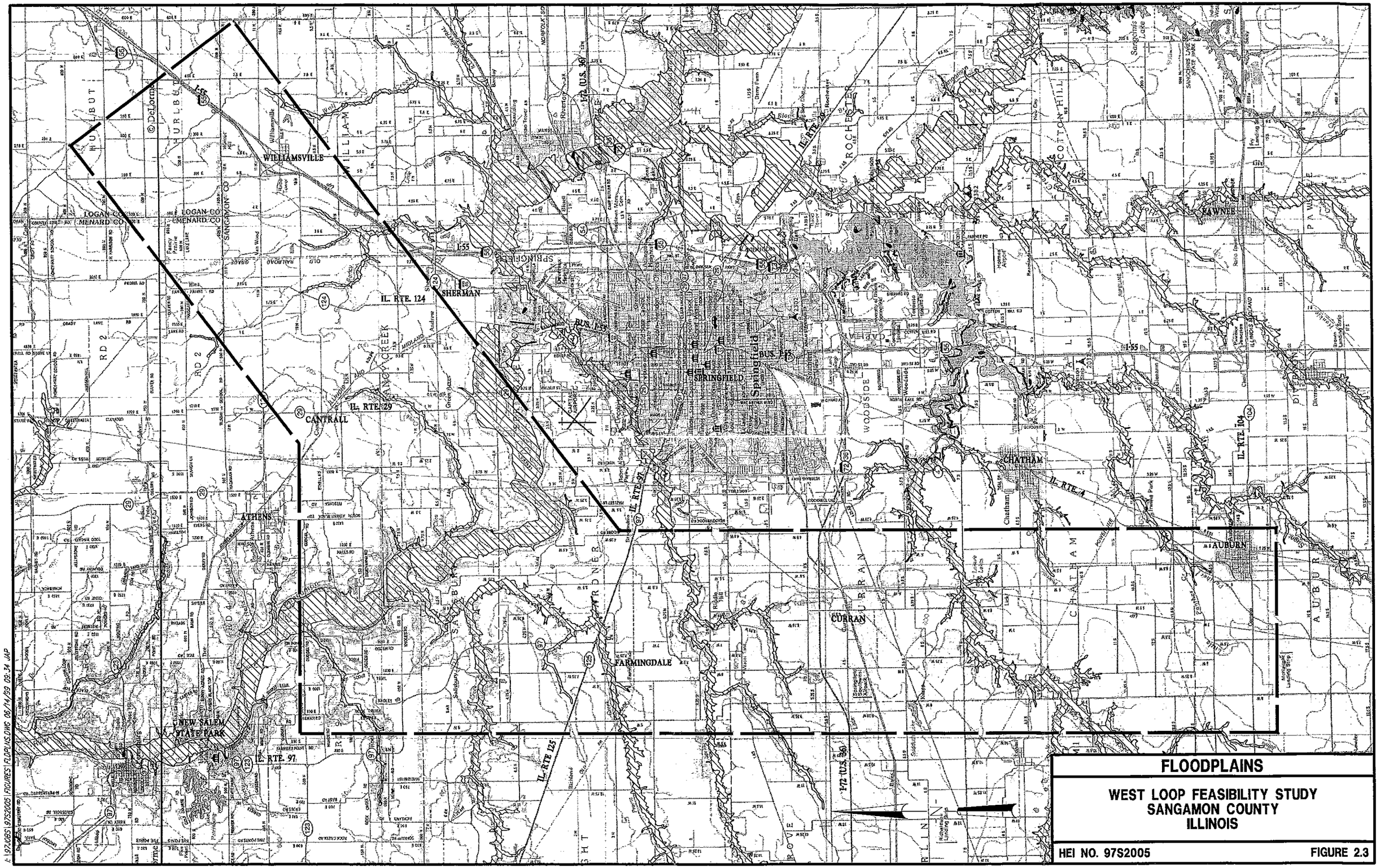

FLOODPLAINS

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005 — FIGURE 2.3

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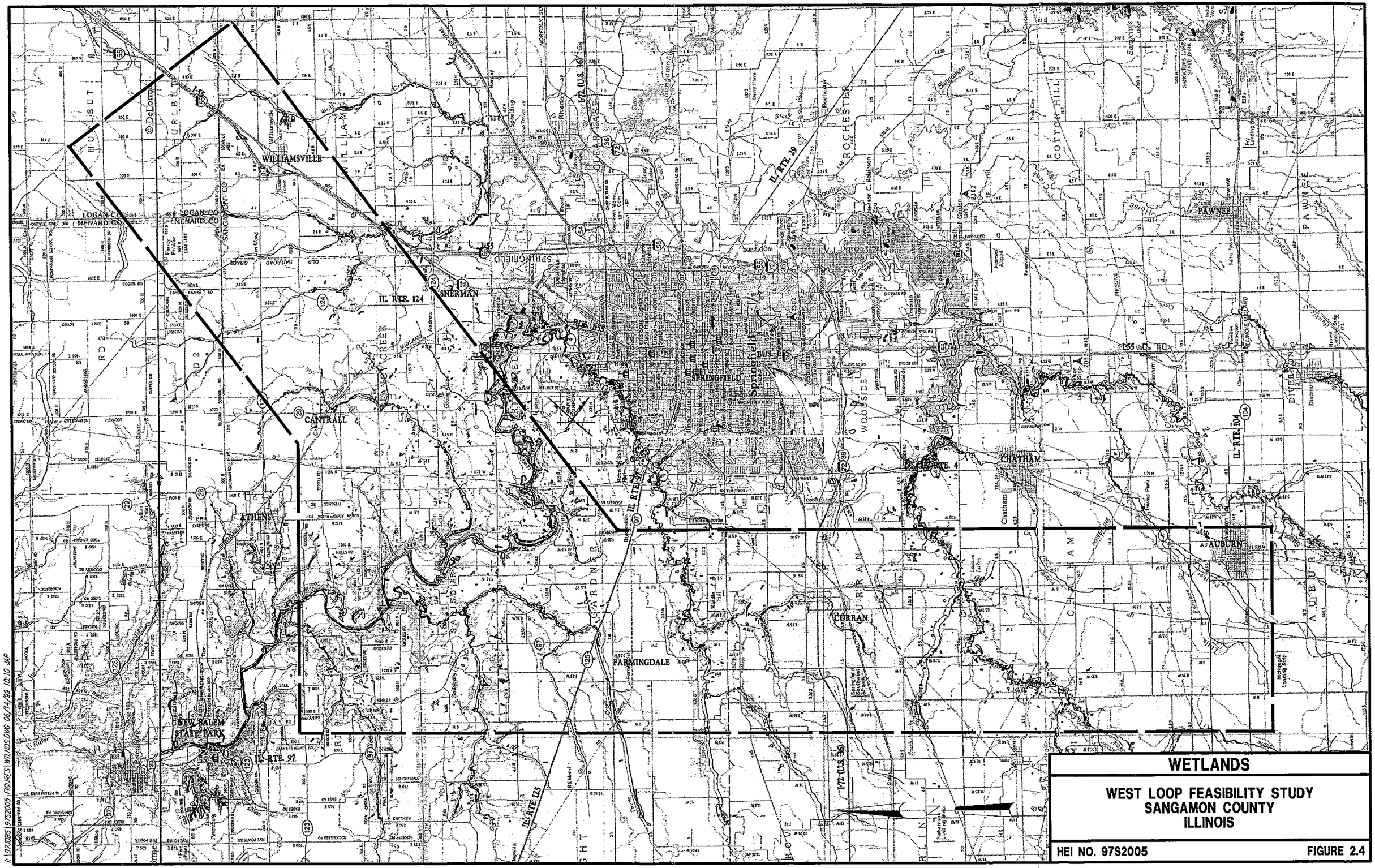

WETLANDS

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005 — FIGURE 2.4

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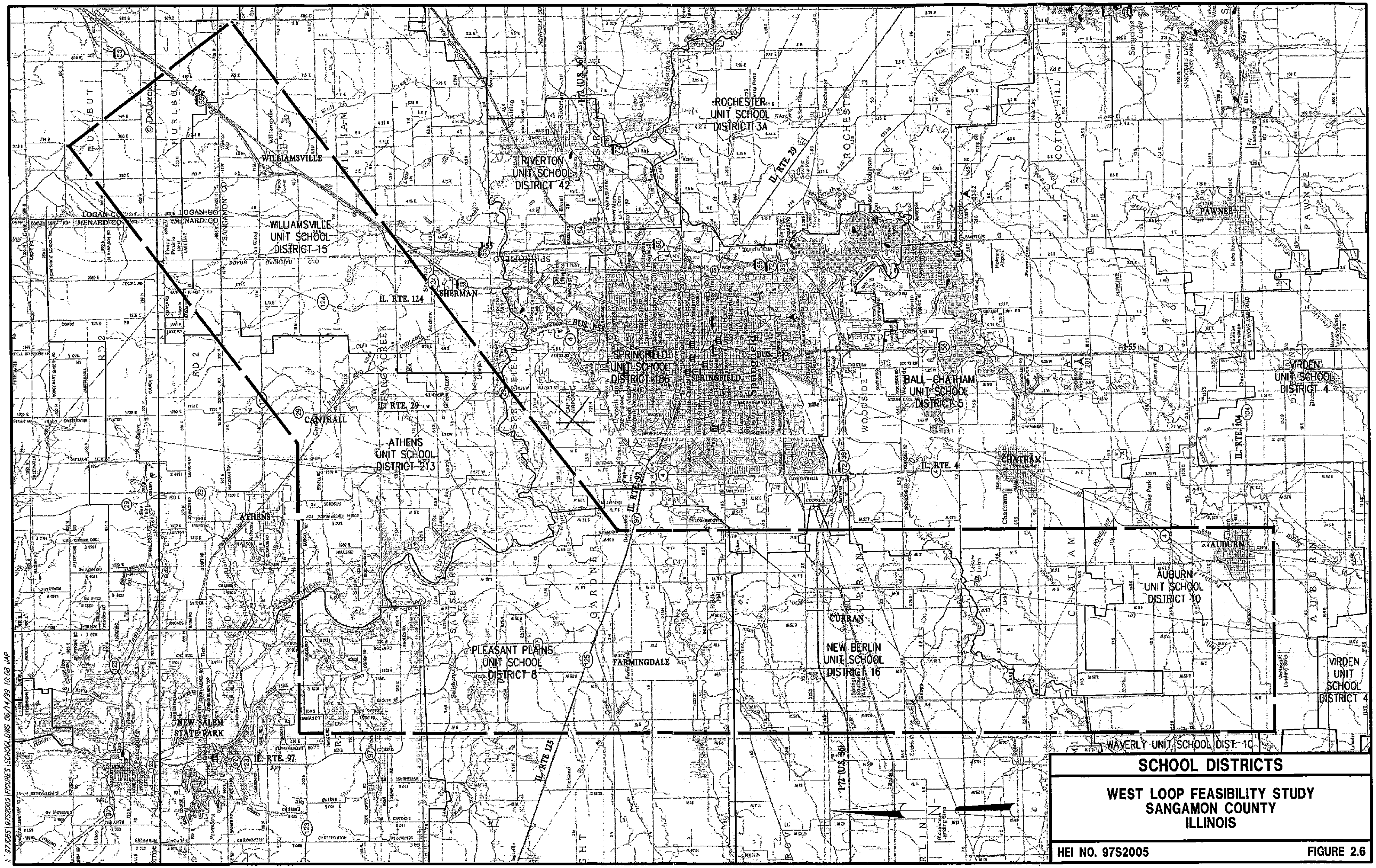

SCHOOL DISTRICTS

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005 | FIGURE 2.6

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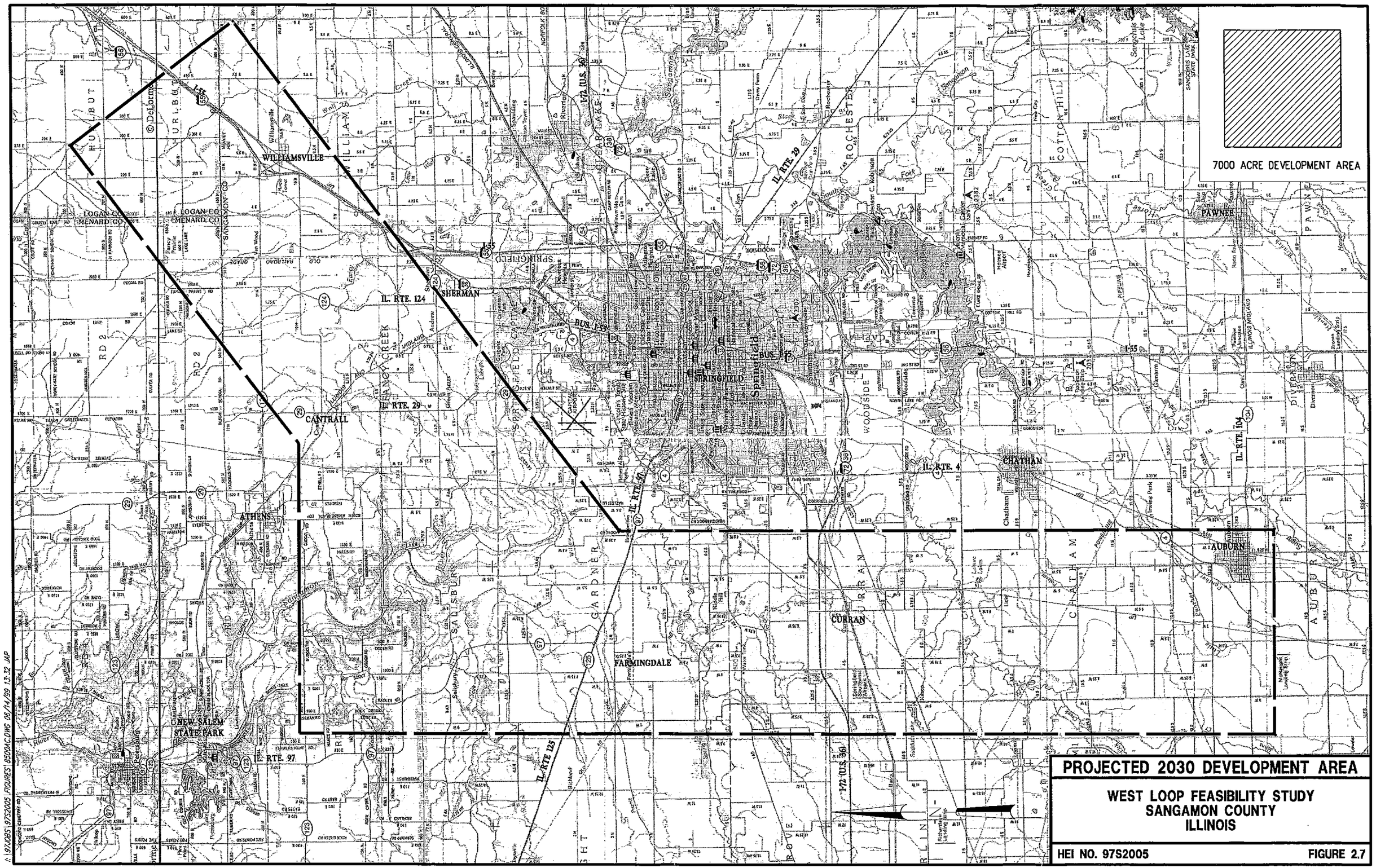

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SECTION 3.0

ALTERNATIVES CONSIDERED

SECTION 3.0
ALTERNATIVES CONSIDERED

3.1 INTRODUCTION

Alternatives considered to meet the transportation needs identified for the project include: no-action, using other modes of transportation, and a number of build alternatives. Each of these alternatives is discussed in detail below.

3.2 NO-ACTION ALTERNATIVE

The no-action alternative would include maintaining the existing federal, state, county, and township roadways located within the study area. If the no-action alternative is selected, the existing road system would remain, receiving only routine maintenance and minor improvements. However, some improvements, such as bridge replacements, could require the acquisition of right-of-way. Impacts would be minimal because of the small amount of land required for grade changes, shoulder widening, or drainage improvements. Some land uses would be expected to remain the same while other land is planned for residential and commercial development. No residences or commercial businesses would likely be taken for highway use, and access to adjacent properties and travel patterns would remain unchanged.

The no-action alternative would fail to meet the purpose and need for the project. The opportunity for economic development of the study area may be lowered by the absence of an improvement to provide shorter travel time, improved traffic circulation and access.

3.3 USING OTHER MODES OF TRANSPORTATION

The City of Springfield promotes pedestrian and bicycle travel as alternative modes of transportation, but they are not viable solutions to the purpose and need of this project. A mass transit service is also available and its use is encouraged. This alternative will require an improved

roadway network to assist in meeting the purpose and need for the project. A public rail transportation system does not exist within the Springfield area to provide an alternate mode of transportation. The Amtrak line has only one stop in Springfield and the general aviation airports are located outside of the study area.

3.4 BUILD ALTERNATIVES

The following general guidelines were established for developing construction alternatives:

1. Freeway, expressway and arterial roadway alternatives are to be considered.
2. The study area is limited as shown in Figure 1.2
3. Design standards will be in accordance with IDOT Bureau of Location and Environment (BLE) Policies and Procedures Manual, AASHTO Policy on Geometric Design of Highways and Streets, and IDOT Criteria for Metric Highway Design (April 1994), Local Roads Administrative Policies, and Federal Aid Procedures for Local Highway Improvements.

3.5 FREEWAY ALTERNATIVE

A freeway alternative was developed connecting Illinois 104 west of Auburn with Interstate 55 near Williamsville. The typical section is shown in Figure 3.1 and includes four 12 ft lanes with shoulders and a wide grass median. A freeway would be fully access controlled with interchanges at major cross roads. All railroad crossings would be grade separated, and crossroads without interchanges would be grade separated or closed. Design criteria for a freeway are shown in Table 3.1.

TABLE 3.1

DESIGN CRITERIA

FREEWAY		
Project Type:	New construction	
Functional Classification:	Trunk Arterial with Full Access Control	
Proposed Design Speed:	70 mph	Criteria for Metric Highway Design, Table 2-100A
Lanes:	4 at 12 ft. each	Criteria for Metric Highway Design, Table 2-100A
Shoulders:	Left 6 ft. bituminous and 2 ft. aggregate Right 10 ft. bituminous, if DDHV of truck >=250, then 12 ft.	Criteria for Metric Highway Design, Table 2-100A
Median:	54 ft. wide open ditch section with 1:6 slopes 3 ft. wide ditch bottom	Criteria for Metric Highway Design, Table 2-100A, and BL&E Manual, Section 2-232
Earth Slopes and Ditches:	Fills: Under or equal to 30 ft. - FS 1:6 to 1:3 (1:6 within 30 ft. clear zone) Cuts: Over 30 ft. - FS 1:2 with SPBGR FS: 1:6, 4 ft. minimum ditch width BS: 1:3	Criteria for Metric Highway Design, Table 2-100A
Grades:	0.5% Min. 3% Max. Level	Criteria for Metric Highway Design, Table 2-300
Minimum Radius (emax 6%):	1855 ft.	Criteria for Metric Highway Design, Table D
Minimum Length of Curve:	495 ft.	Criteria for Metric Highway Design, Table 2-300
Superelevation Transition Length:	80 m minimum - attained 3/4 on tangent and 1/4 on the curve	BL&E Manual, Section 2-334
Maximum Superelevation:	6%	
Vertical Curve Length:	Sag Curve K = 44 Crest Curve K = 81	Criteria for Metric Highway Design, Table F Table E
Clear Zone:	30 ft. from Edge of Pavement	Design and Environment Manual, Roadside Safety, Fig. 38-3A
Intersections:	None Required	
Median Crossover Spacing:	N/A	
Interchanges:		
Design Speed:	40 mph	BL&E Manual, Section 3-333.1a
Maximum Grades:	+4%, -6%	BL&E Manual, Section 3-333(metric)
Design Vehicle:	WB-60	BL&E Manual, Section 3-333.1b
Lanes:	16 ft.	BL&E Manual, Section 3-333(metric)
Shoulders:	Left 4 ft. bituminous, 2 ft. aggregate Right 6 ft. bituminous, 4 ft. aggregate	BL&E Manual, Section 3-333(metric)
Minimum Radius:	410 ft.	BL&E Manual, Section 3-333(metric)
Earth Slopes:	FS: 1:4 to 1:6 within clear zone	BL&E Manual, Section 3-333(metric)
Cross Slopes:	1.5%	BL&E Manual, Section 3-333.1i
Vertical Curves:	Sag Curve K = 16 Crest Curve K = 16	Criteria for Metric Highway Design, Table F Table E
Clear Zone:	15 ft. from Edge of Pavement	Design and Environment Manual, Roadside Safety, Fig. 38-3A
Design Vehicle:	WB-60	
Underdrains:	Provide continous system	
Mailboxes:	N/A	

3.5.1. Location

While a specific location for a freeway alternative was not selected as part of this study, a generalized corridor was defined in order to estimate traffic and to quantify costs and impacts. A location study would need to be completed to determine a final location for a freeway. The alternative corridor is shown in Figure 3.2 and is described below.

The freeway corridor begins at Illinois 104 approximately two miles west of Auburn and extends north to a new diamond interchange at CH-40. The freeway continues north with a grade separation at the SPCSL tracks and Old U.S. 36. There would not be an interchange at Old U.S. 36 because of its proximity to Interstate 72. There would be a new cloverleaf interchange with Interstate 72 approximately 2.5 miles west of the Wabash Avenue interchange. The freeway would continue north to a new diamond interchange with Old Jacksonville Road.

North of this interchange two corridor options are available. The north corridor has a new diamond interchange with Illinois 125 approximately one mile west of the Illinois 125/97 intersection. The freeway continues to the north to a new diamond interchange with Illinois 97 just north of Salisbury, turns to the east to a new diamond interchange with Illinois 29 about one mile north of Cantrall, and continues east to the existing interchange with Interstate 55 at Williamsville. The south corridor turns northeast and has an interchange with Illinois 97 approximately two miles west of Bradfordton, crosses the Sangamon River, and has an interchange with Illinois 29 2.5 miles south of Cantrall. It then turns north and then east to also connect with the Interstate 55 interchange at Williamsville.

Major crossroads without interchanges would be grade separated. All other crossroads would be closed. Frontage roads would be required in many areas to provide access to landlocked parcels.

Most of the freeway would be on new alignment, and would follow existing land lines where possible. Upgrading existing roadways to a freeway is very difficult because numerous residences and other property owners rely on the existing roads for access.

3.5.2 Land Use and Access Control

A freeway provides for moving large volumes of traffic through an area, but the very limited access is an impediment to economic development. Development tends to occur in nodes at the interchanges. Away from the interchanges, the freeway is a barrier to traffic and development. Frontage roads, grade separations, and other expensive measures are needed to solve the access problem.

The anticipated demand for land over the 30 year planning horizon indicates that a new freeway in the proposed corridor would represent a leap beyond the geographic area that generally has an adequate inventory of land available to accommodate future growth. Anticipated growth over the next 30 years will require approximately 7,000 acres (11 sq. mi.) in the metropolitan area. The study area which would support the freeway corridor contains over 150 sq. mi. of developable land. The areas around the city east of the study corridor contain most of the area needed for development. A freeway would promote further leapfrog development.

3.5.3 Traffic

Analysis of the freeway alternative revealed that projected traffic volumes would range from a projected low of 5,700 ADT along the southern portion of the route to a high of over 12,500 ADT in the segment from Interstate 72 north to Route 125. East of Route 29, the freeway was projected to carry 11,000 ADT, while the north segment was projected to carry 8,000 ADT. Selected ADT traffic volumes are shown on Figure 3.3.

Travel times on the freeway alternative would be the best of all three alternatives. However, the use of the freeway would be limited, primarily due to the following reasons:

- While residential growth would continue in the western area of Springfield, it would primarily remain inside the ring created by the freeway alternative. Most new commercial growth in the area immediately adjacent to the freeway would be neighborhood or service related. Major retail sites would continue to be centered along the Veteran's Highway Corridor, extending south along Route 4.

- Office development would remain in the downtown area and along Veteran's Parkway. Additional office development and industrial growth was assumed along the Interstate 72 corridor. However, for most trips, the new freeway would not provide significant travel timesavings over existing routes and the improved roadways included in the SATS 1995 Transportation Plan. Some trips from the new development areas were projected to access the freeway via Old Jacksonville Road, south to Interstate 72.

- The freeway would provide no travel timesavings for through trips through the metropolitan area. Interstate 55 runs north to northeast through Springfield, and the loop road, being on the west side, would require a significantly longer trip (distance and time). Extending the freeway south to Interstate 55 would reduce the travel time, but not enough to justify the trip. The future network projection included additional capacity (3 lanes) on Interstate 55; but it appears than even with the 2 lane sections, there would be few trips diverted. Only the addition of a major destination (i.e. new regional mall) directly on the new freeway would attract any significant amount of trips.

- The number of access points would be limited, especially in the area south of Interstate 72, which reduces the likelihood of low trip length trips using the freeway system (i.e. getting on, then off at the next exit, etc.).

The section of the freeway south of Interstate 72 was projected to carry the least amount of traffic, less than 6,000 ADT. This traffic was attracted from the Loami area and some traffic was attracted from Route 4, which is projected to remain congested in the future year despite improvements. A small amount of traffic destined for the northwest corner of the metropolitan area was also attracted from Interstate 55.

The LOS for the freeway was projected to be very good, LOS A for most segments. A level-of-service (LOS) is a grading system whereby the quality of operation on a street system can be defined. LOS's range from an "A", the best traffic operations, to "F", the poorest. It is generally accepted that for urbanized areas, the minimum acceptable LOS is Level D. The impacts of the freeway on select roadways in the planning area are shown in Table 3.2 below. It was noted that although the projected LOS of Veteran's Parkway was still poor, the freeway would divert some trips from the Salisbury area off of Veteran's Parkway (up to 2,000 ADT).

3.5.4 Cost and Impacts

Length	35 miles
Interchanges	6
Grade Separations	15
New right of way required	1,700 acres
Construction cost (does not include frontage roads)	$200 million

A new freeway would likely result in some residential displacements, loss of a significant area of prime farmland, and would sever numerous agricultural parcels.

Table 3.2

Los For Select Roadways In
Planning Area For Freeway Alternative

Roadway	From	To	LOS
West Loop Freeway	Rt. 104	Interstate 72	A
West Loop Freeway	Interstate 72	IL 125	A
West Loop Freeway	IL 125	IL 29	A
West Loop Freeway	IL 29	Interstate 55	A
Veteran's Parkway	Old Jacksonville Road	Iles	E
Veteran's Parkway	Wabash	Interstate 72	D
IL 4	Woodside	Chatham	B
Wabash	Veteran's Parkway	Koke Mill Road	C
Archer Elevator Road	Iles	Wabash	A
Bradfordton Road	IL 97	Old Jacksonville Road	B
Lenhart Road	Old Jacksonville Road	Iles	A
South Lincoln Trail/Old Covered Bridge Lane	IL 97	Old Salem	A
IL 97	Salisbury	IL 125	A
IL 125	Pleasant Plains	IL 97	D
IL 97	IL 97	Bradfordton Road	A/B
Old Jacksonville Road	Koke Mill Road	Veteran's Parkway	F
Iles Road	Lenhart	Archer Elevator	A
Interstate 72	Wabash	Veteran's Parkway	C
Chatham Road	Interstate 72	Woodside	B/C

3.5.5 Advantages and Disadvantages

Advantages:

- Provides the fastest north-south movement through the study area
- Interchanges provide the best traffic operations at intersections of major roadways
- Attracts more traffic in some segments than an expressway

Disadvantages:

- Most expensive

- Requires multiple road closures
- Provides for development primarily at interchanges
- Few through trips are projected to use this corridor
- Does not attract sufficient traffic in all segments to warrant four lanes
- Not needed to support projected growth in the planning period. It is unlikely to attract development from areas closer in
- Impacts sensitive environmental resources to the northwest in the vicinity of the Sangamon River
- Requires the most property for new right of way
- Creates multiple property severances
- Requires an upgrade of east-west roadways to access the freeway
- Requires the largest initial investment since it does not lend itself as well to stage construction

3.6 EXPRESSWAY ALTERNATIVE

An expressway alternative was developed connecting Illinois 104 near Auburn with Interstate 55 near Williamsville. The typical section is shown in Figure 3.4 and includes two 12 ft lanes with shoulders and a grass median. Design criteria are presented in Table 3.3.

3.6.1 Location

While a specific location for an expressway alternative was not selected as part of this study, a generalized corridor was defined in order to estimate traffic and to quantify costs and impacts. A location study would need to be completed to determine a final location. Unlike a freeway, an expressway can be constructed along an existing roadway alignment if there are not a large number of businesses or residences along the road. Some residential and agricultural access is allowed on an expressway.

TABLE 3.3

DESIGN CRITERIA

EXPRESSWAY		
Project Type:	New construction	
Functional Classification:	Major Arterial with Partial Access Control	
Proposed Design Speed:	70 mph	Criteria for Metric Highway Design, Table 2-100A
Lanes:	4 at 12 ft. each	Criteria for Metric Highway Design, Table 2-100A
Shoulders:	Left 6 ft. bituminous and 2 ft. aggregate Right 10 ft. bituminous	Criteria for Metric Highway Design, Table 2-100A
Median:	50 ft. wide open ditch section with 1:6 slopes 3 ft. wide ditch bottom	Criteria for Metric Highway Design, Table 2-100A, and BL&E Manual, Section 2-232
Earth Slopes and Ditches:	Fills: Under or equal to 30 ft. - FS 1:6 to 1:3 (1:6 within 30 ft. clear zone) Cuts: Over 30 ft. - FS 1:2 with SPBGR FS: 1:6, 4 ft. minimum ditch width BS: 1:3	Criteria for Metric Highway Design, Table 2-100A
Grades:	0.5% Min. 3% Max. Level	Criteria for Metric Highway Design, Table 2-300
Minimum Radius (emax 6%):	1855 ft.	Criteria for Metric Highway Design, Table D
Minimum Length of Curve:	495 ft.	Criteria for Metric Highway Design, Table 2-300
Superelevation Transition Length:	80 m minimum - attained 3/4 on tangent and 1/4 on the curve	BL&E Manual, Section 2-334
Maximum Superelevation:	6%	
Vertical Curve Length:	Sag Curve K = 44 Crest Curve K = 81	Criteria for Metric Highway Design, Table F Table E
Clear Zone:	30 ft. from Edge of Pavement	Design and Environment Manual, Roadside Safety, Fig. 38-3A
Intersections:	a. Left and Right turn lanes provided as required by capacity analysis.	
	b. Signals as required by Illinois MUTCD traffic warrants.	
Median Crossover Spacing:	0.5 to 1.0 miles	BL&E Section 3-136
Interchanges:		
Design Speed:	40 mph	BL&E Manual, Section 3-333.1a
Maximum Grades:	+4%, -6%	BL&E Manual, Section 3-333(metric)
Design Vehicle:	WB-60	BL&E Manual, Section 3-333.1b
Lanes:	16 ft.	BL&E Manual, Section 3-333(metric)
Shoulders:	Left 4 ft. bituminous, 2 ft. aggregate Right 6 ft. bituminous, 4 ft. aggregate	BL&E Manual, Section 3-333(metric)
Minimum Radius:	410 ft.	BL&E Manual, Section 3-333(metric)
Earth Slopes:	FS: 1:4 to 1:6 within clear zone	BL&E Manual, Section 3-333(metric)
Cross Slopes:	1.5%	BL&E Manual, Section 3-333.1i
Vertical Curves:	Sag Curve K = 16 Crest Curve K = 16	Criteria for Metric Highway Design, Table F Table E
Clear Zone:	15 ft. from Edge of Pavement	Design and Environment Manual, Roadside Safety, Fig. 38-3A
Design Vehicle:	WB-60	
Underdrains:	Provide continous system	
Mailboxes:	N/A	

The expressway corridor is shown in Figure 3.5 and is described below.

The expressway corridor begins at Illinois 104 on the west side of Auburn and proceeds directly north to a diamond interchange with Interstate 72 one mile west of the Wabash Avenue interchange with Interstate 72. The expressway continues north and slightly to the west to a new interchange at the Illinois 125/Illinois 97 intersection. It continues north on Illinois 97 and turns east two miles south of Salisbury. It continues east and then turns northeast to cross the Sangamon River, and then turns east again to line up with Andrew Road. The expressway continues east on Andrew Road to the current intersection with Business 5 at Sherman.

At-grade intersections would be constructed at most crossroads, with a minimum intersection spacing of one mile. Existing roadway right-of-way would be used wherever possible.

3.6.2 Land Use and Access Control

An expressway is not as effective as a freeway for moving large volumes of traffic through an area, but it is more effective than a freeway in providing for development. At-grade intersections at a one mile spacing allow for some access along the facility to encourage development. These crossroads also minimize the barrier effect of the expressway.

As with the freeway alternative, however, an expressway would represent a leap beyond the area needed to accommodate future growth. An expressway would encourage a continuation of the leapfrog development patterns.

Access is provided with at-grade intersections at most public roads. Traffic would be separated by a median. Access to existing single-family residences and farms would generally be maintained either by direct access to the highway or by frontage roads and service drives to open crossroads. Commercial access would be directed to intersecting crossroads. Selected road closures would occur where necessary.

3.6.3 Traffic

Analysis of the expressway alternative revealed that projected traffic volumes would range from a projected low of 5,700 ADT along the southern portion of the route to 11,000 - 14,000 ADT east of Route 29. The segment from Interstate 72 north to Illinois 125 was projected to carry 13,500 ADT. Selected ADT traffic volumes are shown on Figure 3.6.

The analysis revealed that, despite the reduction in travel time associated with an expressway alternative compared to a freeway alternative, the projected volumes for the expressway were very close to the freeway alternative. In the area south of Interstate 72 and the Salisbury area, exceeded the projected traffic of freeway alternative. The reasons for this include:

- Project through trips on the freeway alternative appear to be low - most trips would use only a portion of the route for their trip. The greatest traffic timesavings would be incurred when a majority of the trip is on the freeway/expressway. In other words, since most of the trip lengths associated with trips using the freeway or expressway have a major portion of their trip on the east-west connectors or other routes, the actual difference in travel time on the freeway/expressway is a negligible portion of their trip.
- The expressway is also projected to operate at a low congestion level, keeping travel times low.
- The expressway would allow for more access points, thereby allowing more trips of shorter lengths.
- The expressway would be closer to the metropolitan area, as much as a mile in some areas, allowing more growth to occur west of the roadway, and thus, be more likely to use the road.
- The expressway would replace some local roads including Curran and Illinois 97 to Salisbury, thereby capturing the existing and projected trips.

3.6.4 Cost and Impacts

Length	32 miles
Interchanges	4
Intersections	22
Grade Separations	5
New Right-of-Way Required	1,400 acres
Construction Cost	$150 million

An expressway could result in more residential displacements than a freeway, since it would use existing road right-of-way in some locations. It would also result in the loss of a significant area of prime farmland and sever some agricultural parcels.

3.6.5 Advantages/Disadvantages

Advantages:

- Provides for north/south through movement throughout the study area
- Provides interchanges at the most heavily traveled crossroads
- Is less expensive than the freeway alternative
- Requires minimal road closures

Disadvantages:

- Frontage roads may be required within many developments to access the expressway intersections
- Few through trips are projected to use this corridor
- Does not attract sufficient traffic in all segments to warrant four lanes
- Not needed to support projected growth in the planning period. It is unlikely to attract development from closer

- Impacts sensitive environmental resources to the northwest in the vicinity of the Sangamon River.
- Requires upgrading east-west roadways to access the expressway.

3.7 ARTERIAL ROADWAY ALTERNATIVE

The third alternative is construction of an arterial roadway network in the area between Illinois 97/Jefferson Street and CH 40/East Loami Road. This network would consist of improved arterial streets on an approximate one mile grid. These streets would provide improved access to the commercial area along Veterans Parkway, to the central business district, and to Interstate 72. The typical section is shown in Figure 3.7 and includes two 12 ft lanes, two 13 ft lanes, a paved median and curb and gutter. A wide outer lane could also be added for use as a bicycle lane. Intersections would be at a minimum of 0.25 miles and direct commercial and residential access would be limited. All railroad crossings would be grade separated. Design criteria are shown in Table 3.4.

Illinois 97/Jefferson Street would also be improved by widening and reducing access and would serve as the major artery connecting the northwest metropolitan area with Veterans Parkway and the central business district.

The exception to these criteria would be a parkway that extends south from the Illinois 97/Illinois 125 intersection, and has an interchange with Interstate 72, approximately 1.5 miles west of the Wabash Avenue interchange. This roadway would have a wider median, a higher operating speed, intersections limited to a minimum of 0.5 miles and no commercial or residential access. This roadway would serve to move north/south traffic through the study area and provide a connection between the new east/west arterials and major state highways in the area.

TABLE 3.4

DESIGN CRITERIA

SUBURBAN ARTERIAL		
Project Type:	Reconstruction	
Functional Classification:	Arterial with Partial Access Control	
Proposed Design Speed:	45 mph	Criteria for Metric Highway Design, Table 2-100A
Lanes:	2 at 24 ft. each	Criteria for Metric Highway Design, Table 2-100A
Shoulders:	N/A	
Median:	18 ft. raised median	BL&E Section 2-532.2
Earth Slopes and Ditches:	Fills: 1:4 under 25 ft. Over 25 ft. FS 1:2 with SPBGR Cuts: FS 1:4, 2 ft. wide ditch and 3 ft. depth BS 1:4 (under 16 ft.)	Criteria for Metric Highway Design, Table 2-100A
Grades:	5% maximum, 0.3% minimum with curb and gutter	Criteria for Metric Highway Design, Table 2-300
Minimum Radius (emax 4%):	624 ft.	Criteria for Metric Highway Design, Table D
Minimum Length of Curve:	256 ft.	Criteria for Metric Highway Design, Table 2-300
Superelevation Transition Length:	180 ft. attained 3/4 on tangent and 1/4 on curve	BL&E Manual, Section 2-334
Maximum Superelevation:	4%	
Vertical Curve Length:	Sag Curve K = 35 Crest Curve K = 30	Criteria for Metric Highway Design, Table F Table E
Clear Zone:	2 ft. from curb face	Design and Environment Manual, Roadside Safety, Fig. 38-3A
Intersections:	a. Left and Right turn lanes provided as required by capacity analysis.	
	b. Signals as required by Illinois MUTCD traffic warrants.	
Entrances:	Residential entrances allowed.	
Median Crossover Spacing:	Minimum 500 ft., preferably 1320 ft. to 1900 ft.	BL&E Section 3-136 and Criteria for Metric Design
Design Vehicle:	WB-60	
Underdrains:	Provide continous system	
Mailboxes:	Separate turnouts will not be allowed.	

3.7.1 Location

The arterial roadway alternative consists of:

- Improving and extending the existing roadway system between Illinois 97/Jefferson Street on the north, CH-40/East Loami Road on the south, Veterans Parkway on the east and County Highway 15/Farmingdale Road on the west. A number of existing roads and streets would be upgraded to four lane arterials. Some discontinuous roads would be extended and connected. These roads include Cockrell Lane, Bradfordton Road/CH 17, CH-15, Washington Street, Old Jacksonville Road, Mathers Gun Club Road, Spaulding Orchard Road/CH 23, Mansion Road, and CH-40. See Figure 3.8. Some of these road improvements are already included in Springfield's long range plan. See Figure 3.9.
- Construct a new arterial roadway in conjunction with a multi-purpose trail on the north/south Union Pacific Railroad right-of-way west of Curran.
- Construct a parkway extending straight south from the Illinois 97/Illinois 125 intersection to a new interchange with Interstate 72 1.5 miles west of the Wabash Avenue interchange and continuing south to an intersection with CH-40/East Loami Road.
- Illinois 97 from Illinois 125 to Veterans Parkway would also be upgraded to a four-lane roadway with a median.
- Extend Cantrall Creek Road west across the Sangamon River to a connection with Illinois 97. This would provide a continuous east/west road north of Springfield, and allow traffic on Illinois 97 to connect with Interstate 55 without going through the city.

At grade intersections would be constructed with all major crossroads.

3.7.2 Land Use and Access Control

An arterial roadway is not as effective in moving through traffic as an expressway or a freeway, but it provides improved access to developing land. Arterial roadways can also be constructed closer to areas ready for development in the 30 year planning horizon. The proposed north/south parkway crosses two railroads, has an interchange with Interstate 72, and could provide an industrial development corridor in the study area.

An arterial roadway network would provide better links to developable land and the existing and developing local roadway grid system. It would provide better access to the many presently underdeveloped "infill" sites throughout the south and west sides of the area. It could provide improved linkage to existing downtown and other employment centers throughout the metro area. It would encourage a more efficient use of land and infrastructure, and be less likely to encourage urban sprawl. An arterial roadway network with well planned connections to the present and planned roadway system would better support economic development than would an expressway or freeway. The arterial roadway system could be focused on the areas of the corridor most likely to develop in the study timeframe. In fact, construction of the arterial roadway system could be used to encourage development in the most desirable areas.

3.7.3 Traffic

Projected traffic volumes for the arterial alternative ranged from approximately 6,000 ADT to 13,000 ADT. These roadways are projected to operate at a good level of service, although the impact of the roadways on relieving congestion at other locations would be less than the expressway alternative. The segment of roadway between Illinois 125/Illinois 97 and Interstate 72 is projected to carry sufficient traffic that an improved segment (parkway or hybrid arterial/expressway) cross section might be considered. Selected ADT traffic volumes are shown on Figure 3.10.

3.7.4 Cost and Impacts

Total Length	60 miles
Interchanges	2
Cost	$200 million

The actual construction length would vary to match actual development.

3.7.5 Advantages/Disadvantages

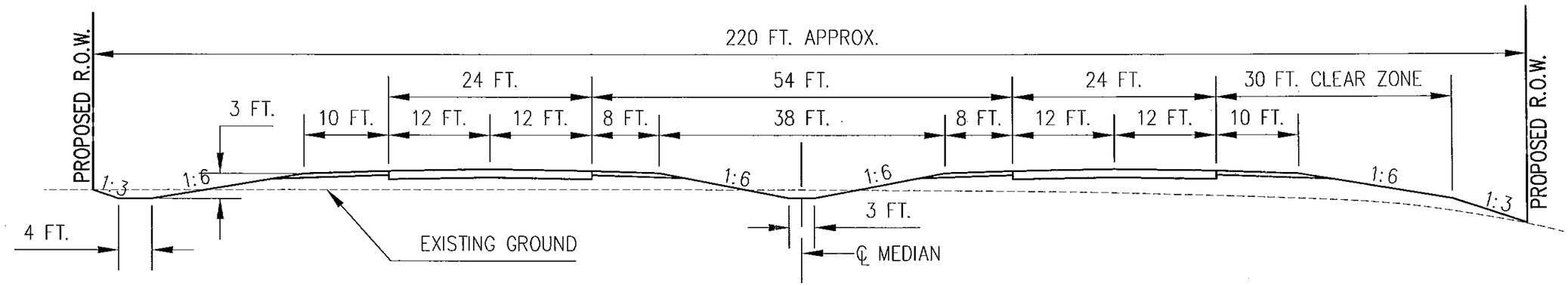
Advantages:

- Makes maximum use of existing right-of-way
- Many roads are already included in the arterial roadway network plan and SATS Long Range Plan
- Consistent with anticipated development
- Construction can be staged to match actual development, minimizing initial investment
- Minimizes impacts on sensitive environmental resources in the northwest
- Provides a new interchange with Interstate 72
- No road closures and fewer severances than the expressway or freeway alternates
- Provides improved east/west connections to existing retail and employment
- Lowest cost per mile of road
- Segments of the roadways could be constructed by developers
- Discourages leapfrog development

Disadvantages:

- Does not provide a north/south through road through the study area

- Lower operating speeds and longer travel times than freeway or expressway alternatives
- Construction in areas already developed could disrupt some existing homes and businesses



FREEWAY

TYPICAL FREEWAY SECTION

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005 **FIGURE 3.1**

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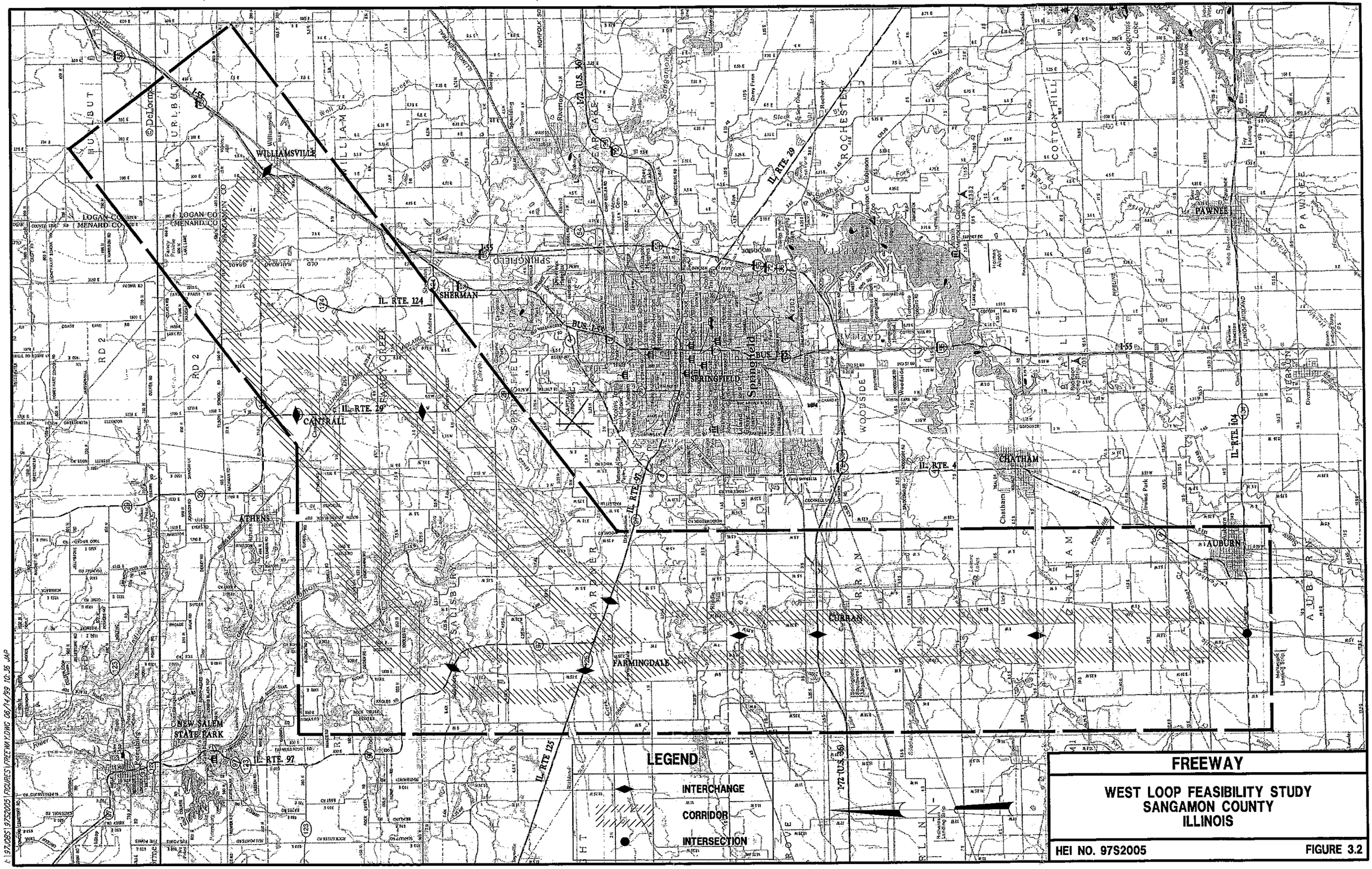

FREEWAY

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005

FIGURE 3.2

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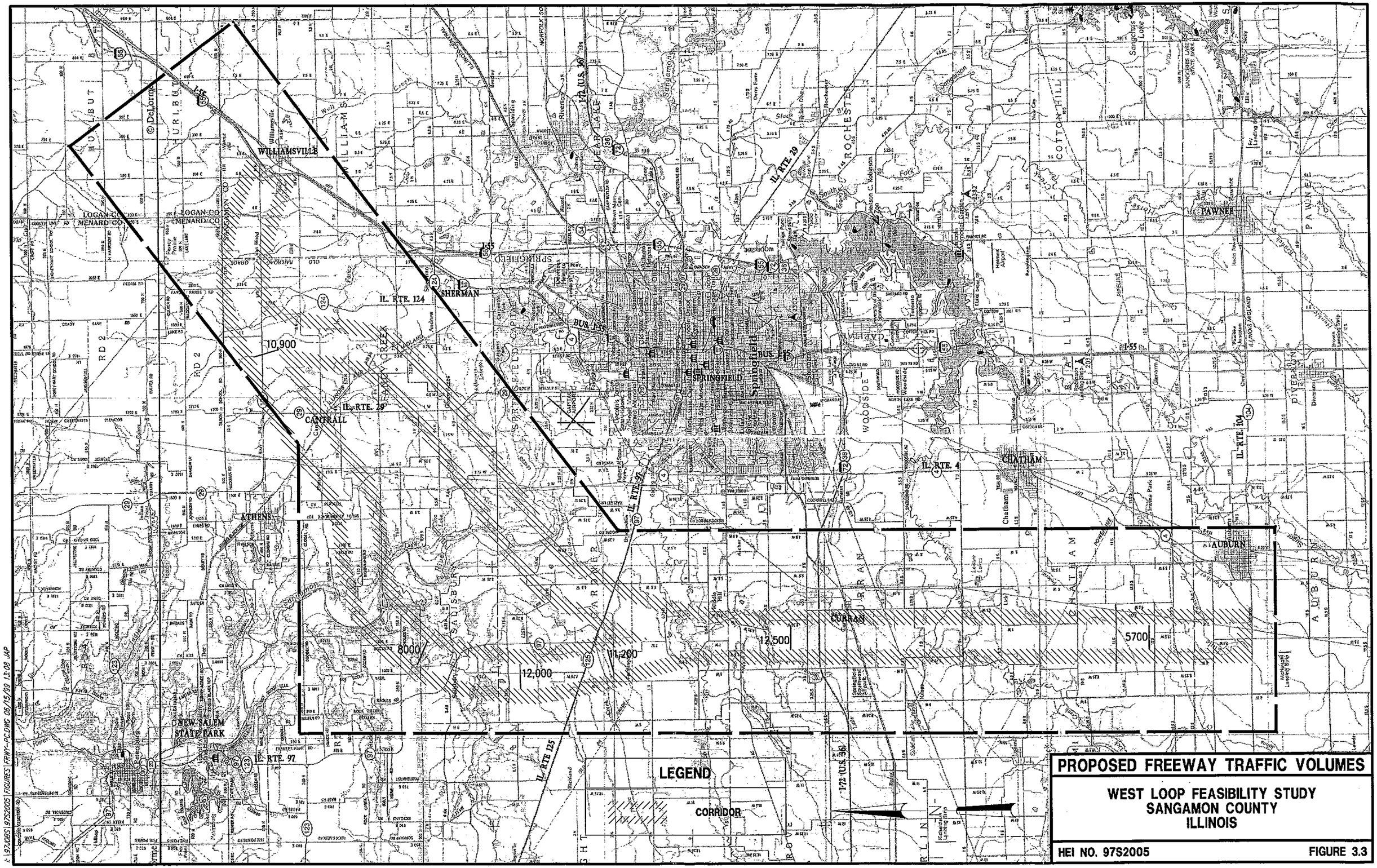

PROPOSED FREEWAY TRAFFIC VOLUMES

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005 — FIGURE 3.3

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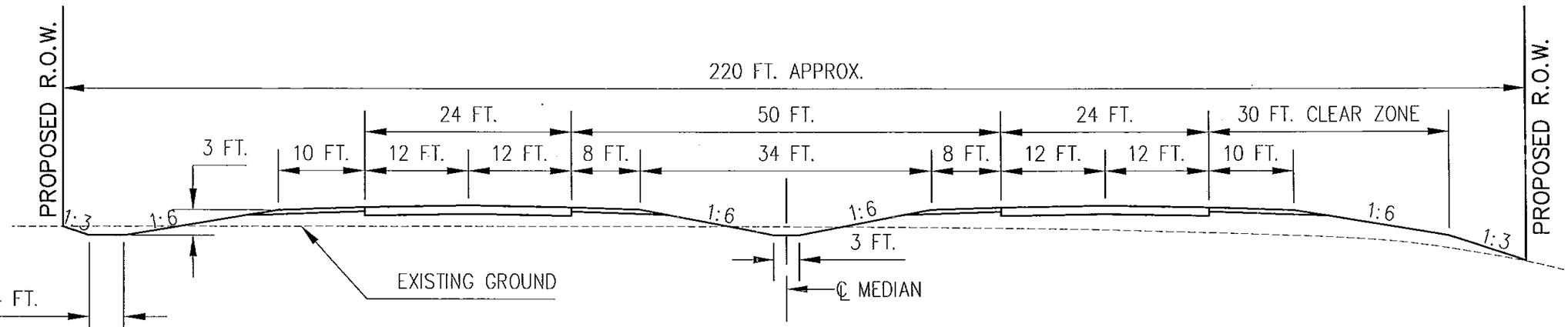

EXPRESSWAY

TYPICAL EXPRESSWAY SECTION

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005 **FIGURE 3.4**

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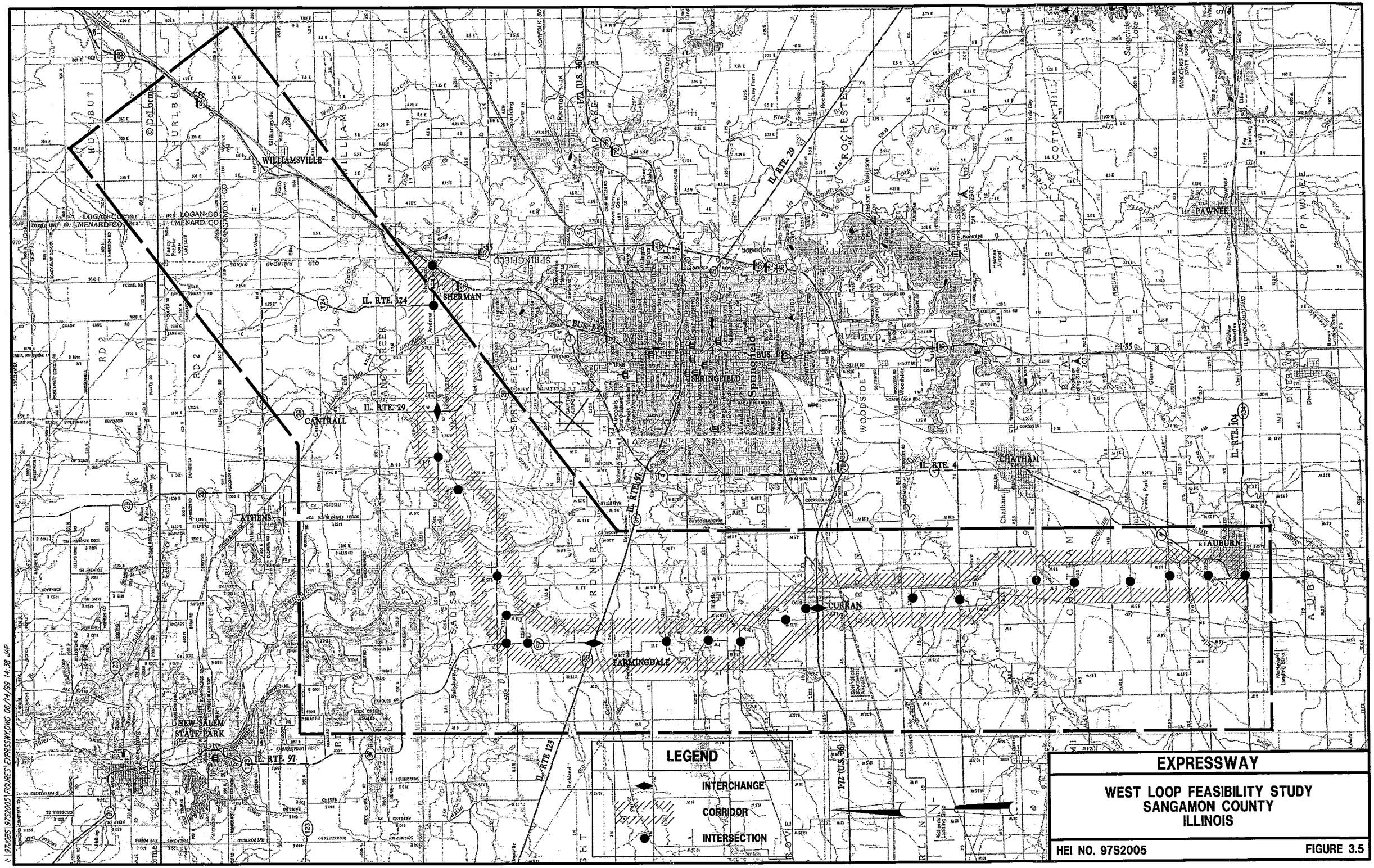

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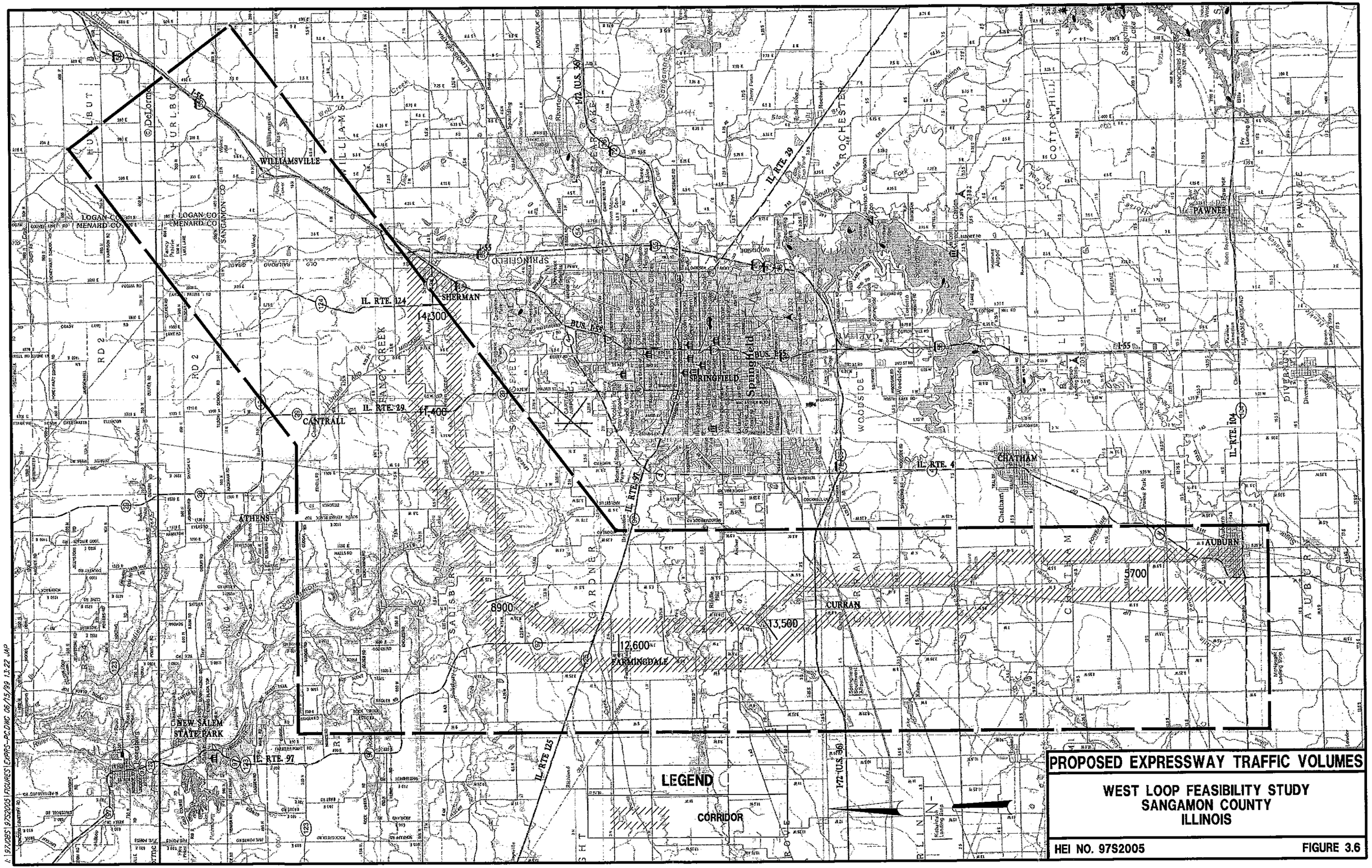
EXPRESSWAY

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005

FIGURE 3.5



PROPOSED EXPRESSWAY TRAFFIC VOLUMES

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 9752005 — FIGURE 3.6

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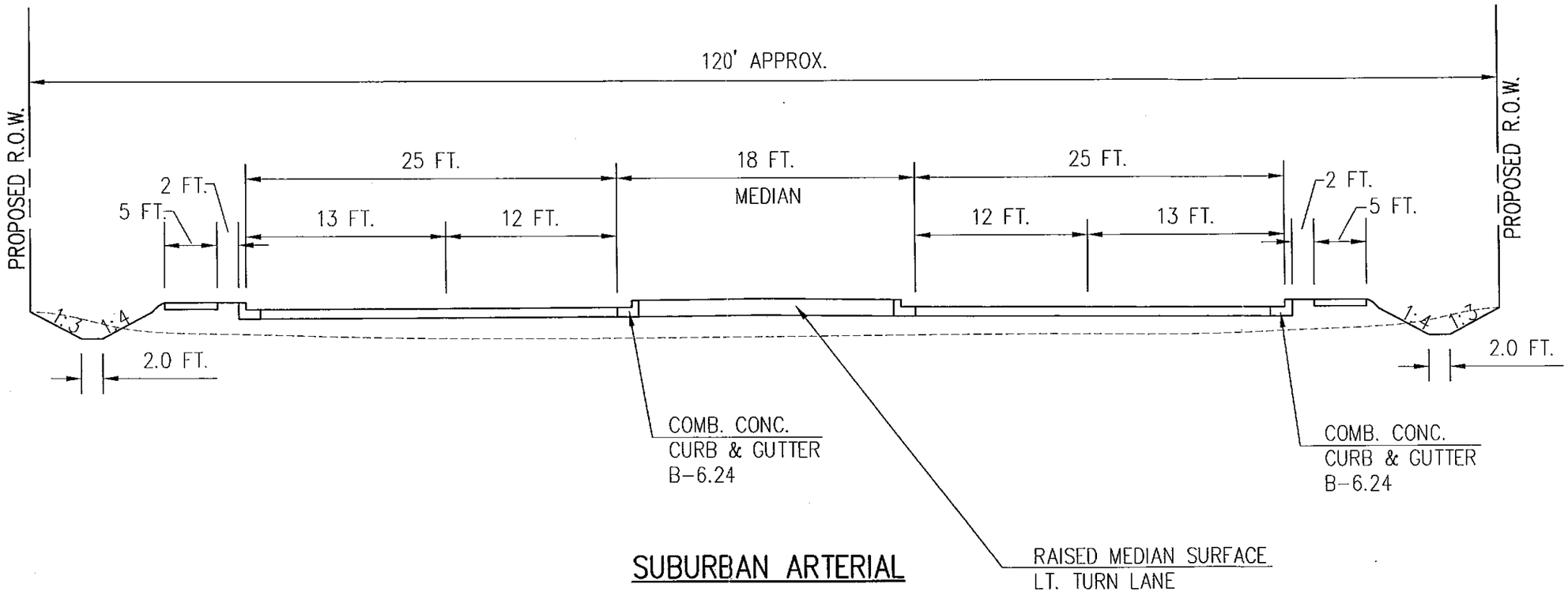

SUBURBAN ARTERIAL

TYPICAL SUBURBAN ARTERIAL SECTION

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005 **FIGURE 3.7**

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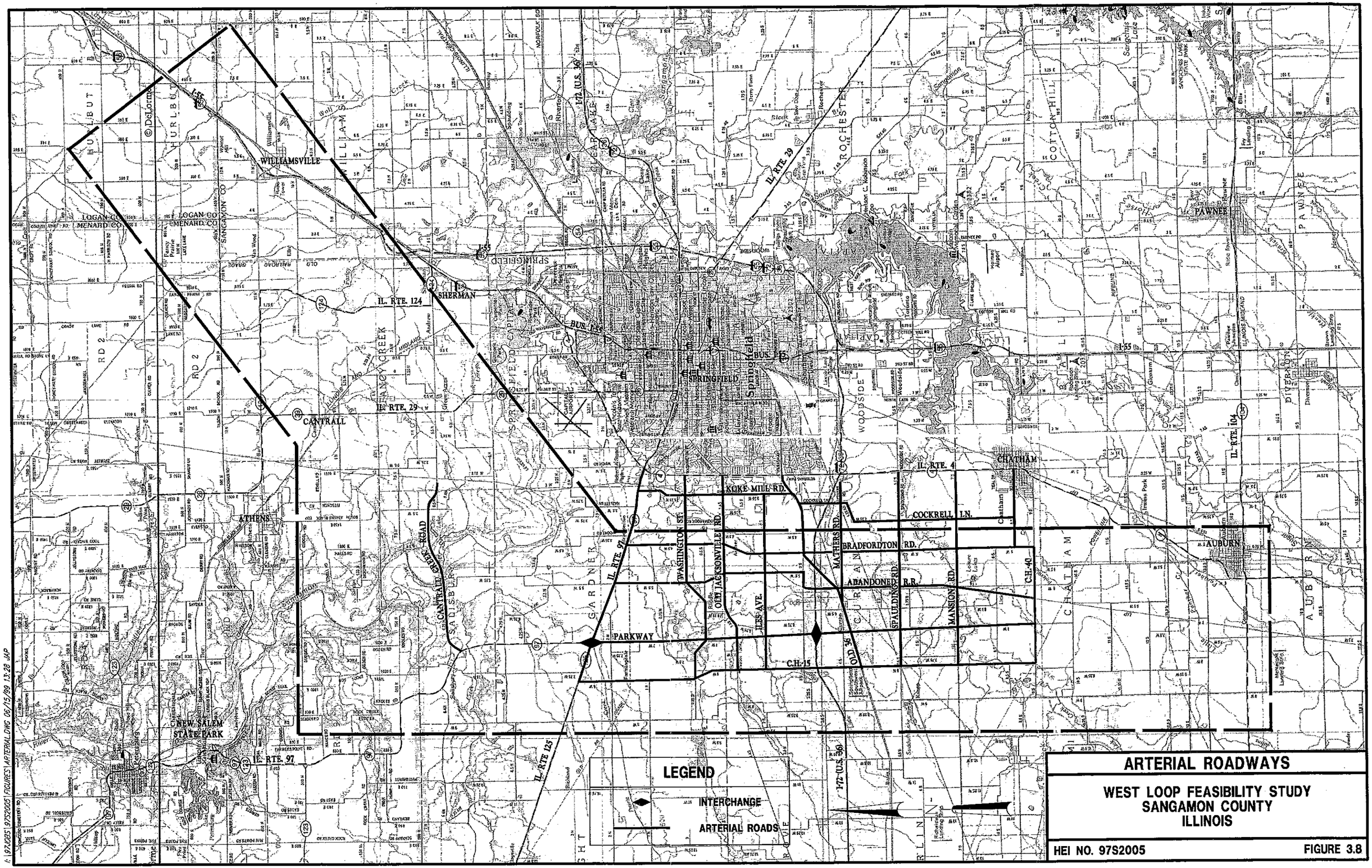

ARTERIAL ROADWAYS

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005 — FIGURE 3.8

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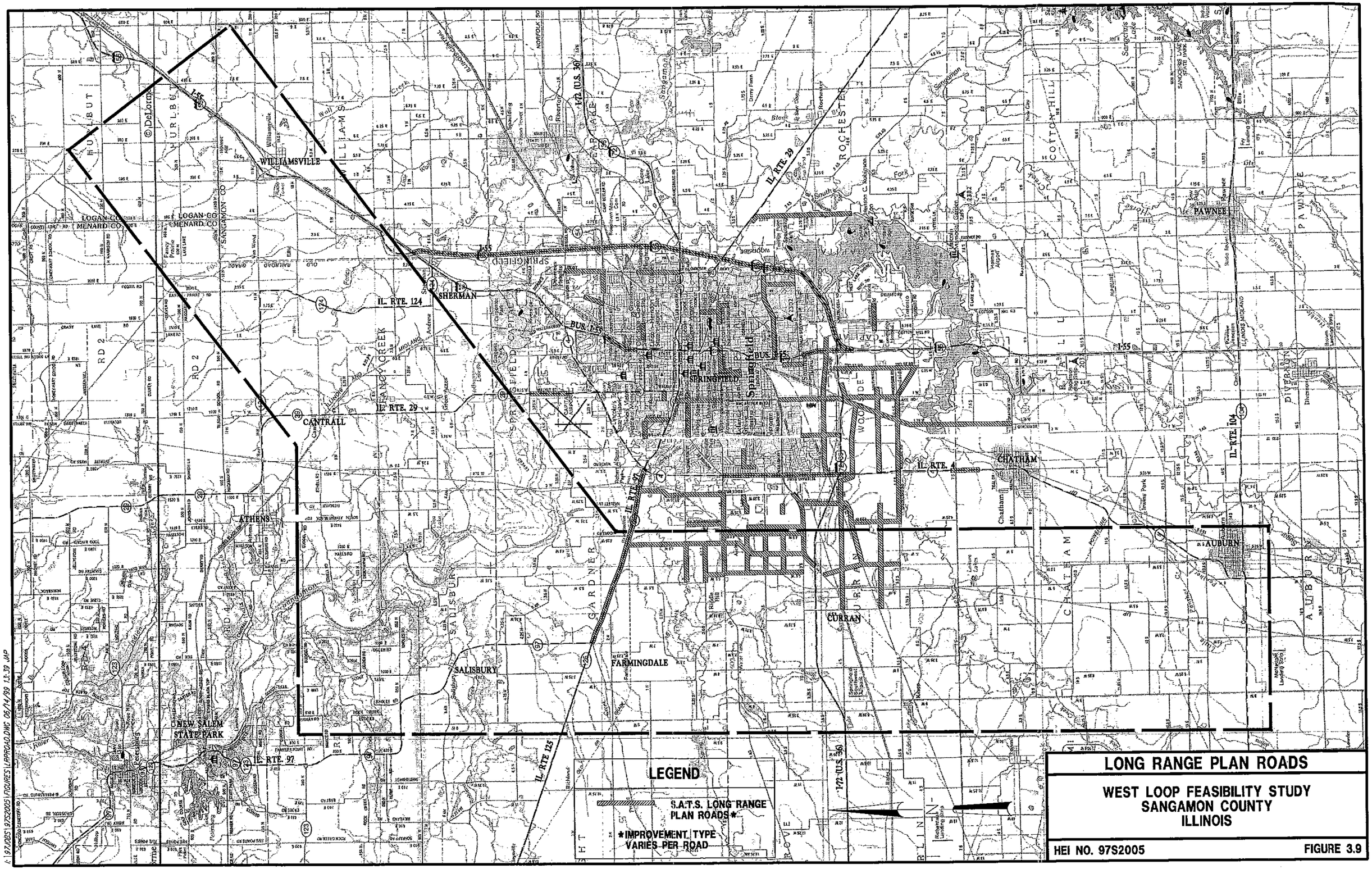

LONG RANGE PLAN ROADS

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005

FIGURE 3.9

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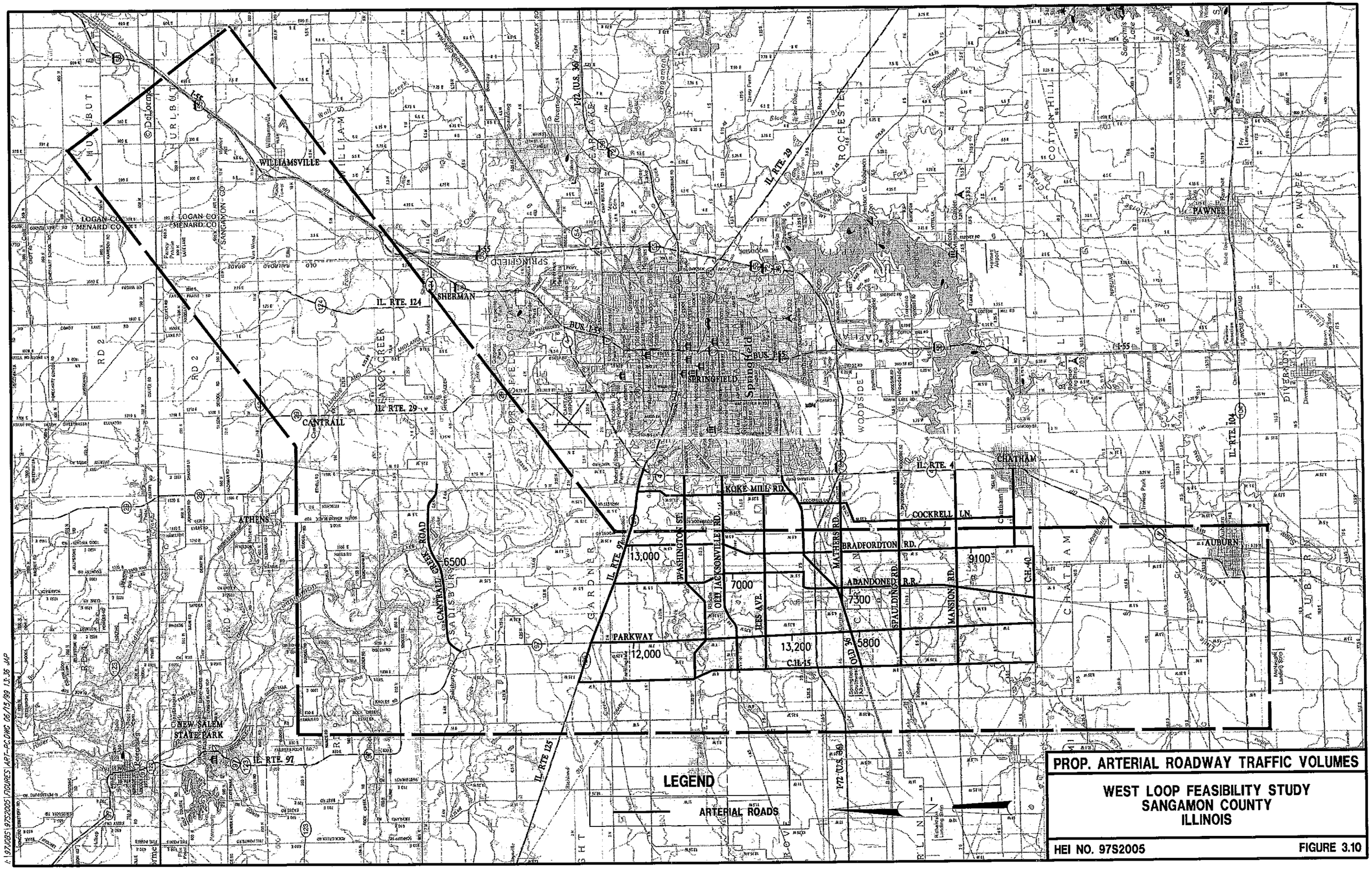

PROP. ARTERIAL ROADWAY TRAFFIC VOLUMES

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

HEI NO. 97S2005

FIGURE 3.10

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SECTION 4.0

CONCLUSIONS

SECTION 4.0
CONCLUSIONS

4.1 CONCLUSIONS

Land use projections indicate that approximately 11 sq. mi. of undeveloped land will be absorbed by residential, commercial, and industrial development in the metropolitan area in the 30 year planning horizon. Much of this area is available by infilling between many of the current scattered developments. Other land is available adjacent to existing development. Many sites currently exist in the metro area with excellent interstate visibility for those types of uses for which this is a locational advantage. There are, however, only a few sites with interstate and rail access.

One example of potential infilling is the large tract that will become available for development after construction of the MacArthur Boulevard extension and the new interchange with Interstate 72. There are approximately 3.9 sq. mi. of vacant land in this area located equidistant from downtown, White Oaks Mall and the growth areas south of Lake Springfield. This area will have excellent interstate and rail access.

A freeway or expressway in the proposed corridor would represent a significant leap beyond a geographic area that has an adequate inventory of land to accommodate growth. It would likely result in leapfrog development into an area with limited infrastructure to support development. Many segments of a new freeway or expressway would not attract sufficient traffic to justify four lanes. The exception is the segment immediately north and south of Interstate 72 and south of Illinois 97. A freeway or expressway would not significantly reduce traffic on Veterans Parkway. A freeway or expressway, even if constructed in usable segments, would require a significant initial investment.

A network of arterial roadways between Illinois 97 and CH-40 and extending west from Veterans Parkway as development occurs is preferable because it would provide better links to developable land and to the many undeveloped infill sites west of Veterans Parkway. It would also

divert more traffic from Veterans Parkway than the freeway or expressway alternatives. It would encourage a more efficient use of land and infrastructure and be less likely to encourage sprawl. Furthermore, an arterial network can be built in increments as development occurs. It also provides more opportunities for cost sharing with developers.

There are four elements of the arterial network that warrant particular attention.

- A westward extension of Cantrall Creek Road across the Sangamon River to connect with Illinois 97 would provide a valuable east/west corridor connecting to Interstate 55 via Andrew Road across the north side of the metropolitan area.
- Illinois 97/Jefferson Street should be upgraded, and the access control improved to allow it to function as the primary arterial between downtown, Veterans Parkway and the northwest area.
- A corridor should be reserved for a new parkway extending south from the Illinois 97/ Illinois 125 intersection to County Highway 40 with provisions for a new interchange with Interstate 72.
- A Certificate of Interim Trail Use has been issued for the abandoned north/south Union Pacific tracks in the study area. Cooperative use of this corridor may be possible if right-of-way is preserved for a future transportation/trail corridor.

It should be noted that in the course of this analysis, it became apparent that the metropolitan areas transportation problems in this area are related to east-west movement. No major east-west corridor between Jefferson and Wabash exists, especially one that connects to Interstate 55. Traffic congestion on Veteran's Parkway could be mitigated with such a connection.

It should also be noted that, although not part of the study, the MacArthur extension appears to have a significant impact on improving traffic conditions on Veteran's Parkway. The improvement of this roadway to the Chatham area will contribute to mitigation of Illinois 4 congestion. Further efforts to improve Veteran's Parkway travel conditions will have to focus on access control and cross access agreements given the concentration of commerce there.

SECTION 5.0

RECOMMENDATIONS

SECTION 5.0
RECOMMENDATIONS

5.1 RECOMMENDATIONS

Based on the information presented, the arterial roadway alternative is the recommended alternative for the west loop improvement, because it enhances the potential for development throughout the study area and meets the purpose and need for the project.

The SSCRPC, the City, and the County should continue to move aggressively to reserve the necessary right-of-way for construction of an arterial roadway network west of Veterans Parkway. These corridors should be included in the long range transportation plan, and should be included in any platted subdivisions in the area.

The city should move forward with the MacArthur Boulevard extension and other roadway projects that encourage infilling of areas between scattered developments in an effort to keep the metropolitan area as compact as possible.

The Department of Transportation should proceed with its current efforts to improve the capacity of Veterans Parkway, particularly at key intersections such as Interstate 72, Wabash Avenue and Illinois 97.

The City of Springfield should encourage redevelopment of underused and blighted areas, particularly in areas surrounding downtown where the infrastructure is in place to support growth. Conversely, it should support efforts to limit suburban sprawl.

The City and County should also limit strip developments along highways, minimize curb cuts, and require master planning for large tracts of land. An access management policy for arterial roadways can improve safety, reduce congestion and delays, and promote desirable land use

patterns by concentrating access to roadways at intersections rather than allowing multiple driveway access.

The city and county should also enforce a strict land use plan that corresponds with the roadway structure that is to be developed.

SECTION 6.0

PROJECT COORDINATION

SECTION 6.0
PROJECT COORDINATION

6.1 PROJECT COORDINATION

The Springfield Sangamon County Regional Planning Commission met with city and county officials to discuss the results of this study.

APPENDIX A

LAND USE STUDY

TECHNICAL MEMORANDUM

Evaluation of Market Demand
Springfield West Loop
Feasibility Study

MAY 1999

DEVELOPMENT STRATEGIES

CONSULTANTS IN REAL ESTATE, COMMUNITY, AND ECONOMIC DEVELOPMENT
REAL ESTATE APPRAISAL

May 27, 1999

Mr. James Moll, P.E., S.E.
Partner
Hanson Engineers Incorporated
1525 S. 6th Street
Springfield, IL 62703

Dear Jim:

Development Strategies is pleased to present the revised attached technical memorandum evaluating the current and future demand for new residential, office, retail and industrial development in the Springfield Metropolitan area.

After completing our research, we have concluded that a non-expressway road alignment would offer the most advantages based on market demand and current and future land use development patterns.

The land absorption, households and employment estimates are summarized below and in much greater depth within the following report.

- We estimate that there will be there will be 15,400 new households between 2000-2030, which will require that 5,775 acres be set aside for residential use.
- Office, retail and industrial development will require approximately 1,200 acres of land to accommodate future employment growth.
- The increase in total employment will exceed 30,000 new jobs by 2030.

The distribution of projected new households and employment by transportation zone (TAZ) is provided in the appendix.

Development Strategies appreciates the opportunity to assist you with this evaluation. We will be glad to hear from you as this process evolves and are ready to assist you further.

Sincerely,

Barry Hogue, CED, AICP
Principal

Jennifer Olmstead
Development Analyst

TABLE OF CONTENTS

Appendix

1.0 INTRODUCTION AND KEY FINDINGS

As part of the Springfield Sangamon County Regional Planning Commission's West Loop Feasibility Study, Development Strategies has been retained by Hanson Engineers Incorporated to evaluate the current and future demand for new residential, office, retail and industrial development in the Springfield Metropolitan area. The objective of our work has been to identify the future development patterns that will affect future transportation patterns in Springfield.

The evaluations and analyses summarized in this memorandum report focus on four important market and economic factors that will influence future growth patterns:

- Public policies that influence land use
- Demographic factors and trends
- Future land use and development patterns
- Estimated land absorption rates

This information then provided us the rationale for estimating net new households and employment for the purpose of distributing net new households and employment by transportation zones for the traffic generation models.

Our projections are based on existing demographic data and projections and the overall trends that have occurred in Springfield. The research was also supplemented with information we gained by interviewing real estate and development professionals and public policy makers familiar with the area.

The following is a summary of our key findings and conclusions:

Demographic Factors and Trends

- Sangamon County's population is growing at a rate of 5.28 percent per decade. Between 1970 and 1980, Sangamon County's population grew from 161,335 to 178,386.

- Growth should continue at a rate of 5.28 percent per decade through 2010 and then will slow to a rate of 4.0 percent through 2030. The 2030 population in Sangamon County is likely to be approximately 213,855. This translates to approximately 15,400 net new households from 2000 to 2030.

- Between 1990 and 1997 Sangamon county experienced growth rates in new housing permits that exceed household growth. Growth in housing permits will slow down to better reflect the modest growth in jobs, population and the dilution of previous pent up demand.

- The fastest growing census tracks in Sangamon County are located in the south and southwest portions of the county.

- New housing permits for years 1990-1997 are concentrated in the area immediately west of Veterans Parkway and southwest of the I-72/I-55 interchange.

Labor Force Projections

- Employment grew modestly in Springfield, lagging behind both the state of Illinois and other Illinois regions similar to Springfield.

- The Springfield economy is characterized by high concentrations of employment in the public, service and retail trade sectors. State government, the largest employer assures the stability of the economy.

- Between 1992 and 1997, nonagricultural employment grew by 4.1 percent. Between 2000 and 2030 the Springfield labor force is projected to grow by 26 percent, or an annual average of just less than 1 percent a year.

- Public, service and retail trade sectors will continue to have high concentrations and will influence the commercial/office development patterns.

- Slow growth and a low base of manufacturing and wholesale trade jobs will cause slow land absorption rates for industrial land.

Land Use Absorption Rates

- The 15,400 new households anticipated for Springfield in 2030 suggest that approximately 5,775 acres should be planned for residential use.

- It is estimated that approximately 626 acres will be needed to support the estimated 5.4 million square feet of office space anticipated for 2030.

- An estimated 469 acres of land should be planned for retail development.

- The amount of land needed to accommodate the 2030 estimate of 1 million square feet of industrial space is anticipated to be approximately 120 acres.

Based on population and employment growth rates and land absorption rates, we believe that a non-expressway alternative would provide the best options for serving the growing population. A new roadway system will need to be combined with a well-conceived land use plan, road cross-section and traffic signalization system for the corridor to prevent the duplication of the problems found along Veterans Parkway.

Residential Trends

The population of Springfield MSA (Sangamon and Menard counties) was estimated to be 203,345 in 1996 (latest available date from local sources[1]). This was up 7 percent from 189,550 in 1990. While the Springfield MSA is made up of two counties, 94 percent of the population is concentrated in Sangamon county. Menard county will continue to grow but the population concentration will remain in Sangamon county. Because of data availability, and the fact that the bulk of population resides in Sangamon county, the data present will focus on Sangamon county.

The Springfield Sangamon County Regional Planning Commission (SSCRPC) projects that population will increase an average of 5.28 percent per decade through 2020. As outlined in the table below, we predict that the Sangamon County population will increase an average of 5.2 percent until 2010, a rate slightly higher than SSCRPC, but that growth rates will slow down to an average of 4.0 percent for years 2010-2030. Household estimates are based on population estimates. We estimate that household size will decrease from an average size of 2.47 in 1990 to 2.28 in 2030.

Sangamon County Population Estimates

Estimates	*1990*	*2000*	*2010*	*2020*	*2030*	*Avg. Decade growth 1970-90*	*Percent Change 1990-00*	*Percent change 2000-10*	*Percent change 2010-20*	*Percent change 2020-30*
Population										
Sangamon County	178,366	187,805	197,721	205,630	213,855	5.28%	5.3%	5.3%	4.0%	4.0%
Households										
Sangamon County	72,146	78,252	84,137	89,404	93,652	6.1%	8.5%	7.52%	6.26%	4.8%
Household Size	2.47	2.40	2.35	2.30	2.28					

Source: SSCRPC, State Bureau of the Budget projections, and DSI estimates.

Residential Permits

Between 1990 and 1997 an estimated 9,488 housing permits or an average of 1,355 permits a year were issued for Sangamon county. New housing permits have outpaced population and household growth and we anticipate that new housing growth will not continue at this level in the next 10 to 30 years. Between 1990 and 1997, the City of Springfield demolished approximately 1,488 housing units. Factoring in this data still shows that new permits outpace population growth. Housing development is expected to slow down to better reflect the modest growth in jobs, population and the dilution of previous pent up demand.

New housing permits issues between 1990 and 1997 are concentrated in the area immediately west of Veterans Parkway and southwest of the I-72/I-55 interchange.

[1] Springfield Chamber of Commerce, 1998.

Employment

The Springfield economy is characterized by high concentrations of employment in the public, service and retail trade sectors. State government is the largest employer, followed by medical care, insurance administration and other service industries. Employment grew modestly in Springfield, lagging behind both the state of Illinois and other Illinois regions similar to Springfield.

The table below presents employment growth. Between 1992 and 1997, the labor force grew 4 percent in Springfield, compared to 10 percent in the state of Illinois and 14 percent in Bloomington Normal.

Employment by Industry for Springfield, Bloomington-Normal and State of Illinois, 1992-1997

	Springfield			*Bloomington-Normal*			*Illinois*		
Industries	*1992*	*1997*	*Percent Change*	*1992*	*1997*	*Percent Change*	*1992*	*1997*	*Percent Change*
Total Nonagricultural	108,600	114,100	4.1%	69,300	78,800	13.7%	5,235,000	5,773,000	10.3%
Construction & Mining	4,500	4,900	8.9%	2,000	2,600	30.0%	214,000	247,000	15.4%
Manufacturing	4,100	4,400	7.3%	7,100	8,700	22.5%	919,000	974,000	6.0%
TCPU	5,100	4,800	-5.9%	2,900	2,900	0.0%	303,000	337,000	11.2%
Wholesale Trade	5,100	4,800	-5.9%	3,100	2,800	-9.7%	*	*	*
Retail Trade	18,600	19,500	4.8%	12,900	14,500	12.4%	1,236,000	1,305,000	5.6%
FIRE	8,000	7,900	-1.3%	11,800	13,900	17.8%	379,000	399,000	5.3%
Services	30,300	33,900	11.9%	16,300	19,800	21.5%	1,410,000	1,686,000	19.6%
Government	32,900	33,900	3.0%	13,100	13,600	3.8%	774,000	806,000	4.1%

Source: Bureau of Labor Statistics, 1998
**Retail and wholesale trade are combined.*

Labor Force Projections

Between 2000 and 2030 the Springfield labor force is projected to grow by 26 percent, or an annual average of just less than 1 percent a year. The labor force is projected to grow an average of 8 percent per decade. Public, service and retail trade sectors will continue to have high concentrations. The service sector will continue to be a large part of the economy through 2030. It is projected that growth in services will continue through 2030, slowing down slightly. Growth in government will continue at a constant rate of just less than 1 percent a year. Below is a chart showing labor force projections. A full copy of projections, showing growth rates per decade can be found in the appendix.

Office Space

It is estimated that approximately 2,793 acres will be needed to support the estimated 24,000,000 square feet of office space anticipated for 2030. This estimate is based on the number of employees in government, finance, insurance and real estate (FIRE), and office related services industries. This estimate assumes a F.A.R. of 0.30, and a market flexibility factor of 1.5.

Office space	2000	2010	2020	2030	Cumulative (2000-2030)
New Employment	--	5,684	6,069	6,414	18,167
New Office Space (sq.ft.)	--	1,705,200	1,820,700	1,924,200	5,449,993
New Acres	--	196	209	221	626
Based on employment at 1 employee per 300 sq. ft. and .3 FAR and 1.5 multiplier. It is estimated that 55 percent of services industry employees are office related jobs and therefore include in office space calculations.					

Retail Space

An estimated 1,976 acres of land should be planned for retail development in the Springfield MSA. This would accomidate1,203,000 square feet of retail space. These estimates assume a 0.25 F.A.R and a 1.5 market flexibility multiplier. Space is based on employment projections in the retail trade and retail related services industries.

Retail space	2000	2010	2020	2030	Cumulative (2000-2030)
New Employment	--	3,526	3,803	4,010	11,339
New Commercial Space (sq.ft.)	--	1,057,800	1,140,900	1,203,000	3,401,700
New Acres	--	146	157	166	469
Based on employment at 1 employee per 300 sq. ft. and .25 FAR and 1.5 multiplier. It is estimated that 45 percent of services industry employees are in retail trade related services.					

Industrial Land

The amount of land needed to accommodate the estimated 1 million square feet of industrial space is anticipated to be approximately 120 acres. This estimate is based on the number of employees in the manufacturing and wholesale trade industries in 2030. However, any single large company could significantly alter this projection. Also, if warehouse/distribution uses are attracted to the corridor the amount of land required could be significantly greater, however, total employment will be essentially the same. The estimate is based upon a .40 floor area ratio and a market flexibility multiplier of 2.0 since most industrial users like to allow a generous supply of surplus land for expansion.

Industrial space	2000	2010	2020	2030	Cumulative (2000-2030)
New Employment	--	350	350	350	1,050
New Industrial Space (sq.ft.)	--	350,000	350,000	350,000	1,050,000
New Acres	--	40	40	40	120
Based on employment at 1 employee per 1,000 sq. ft. and .4 FAR and 2.0 multiplier					

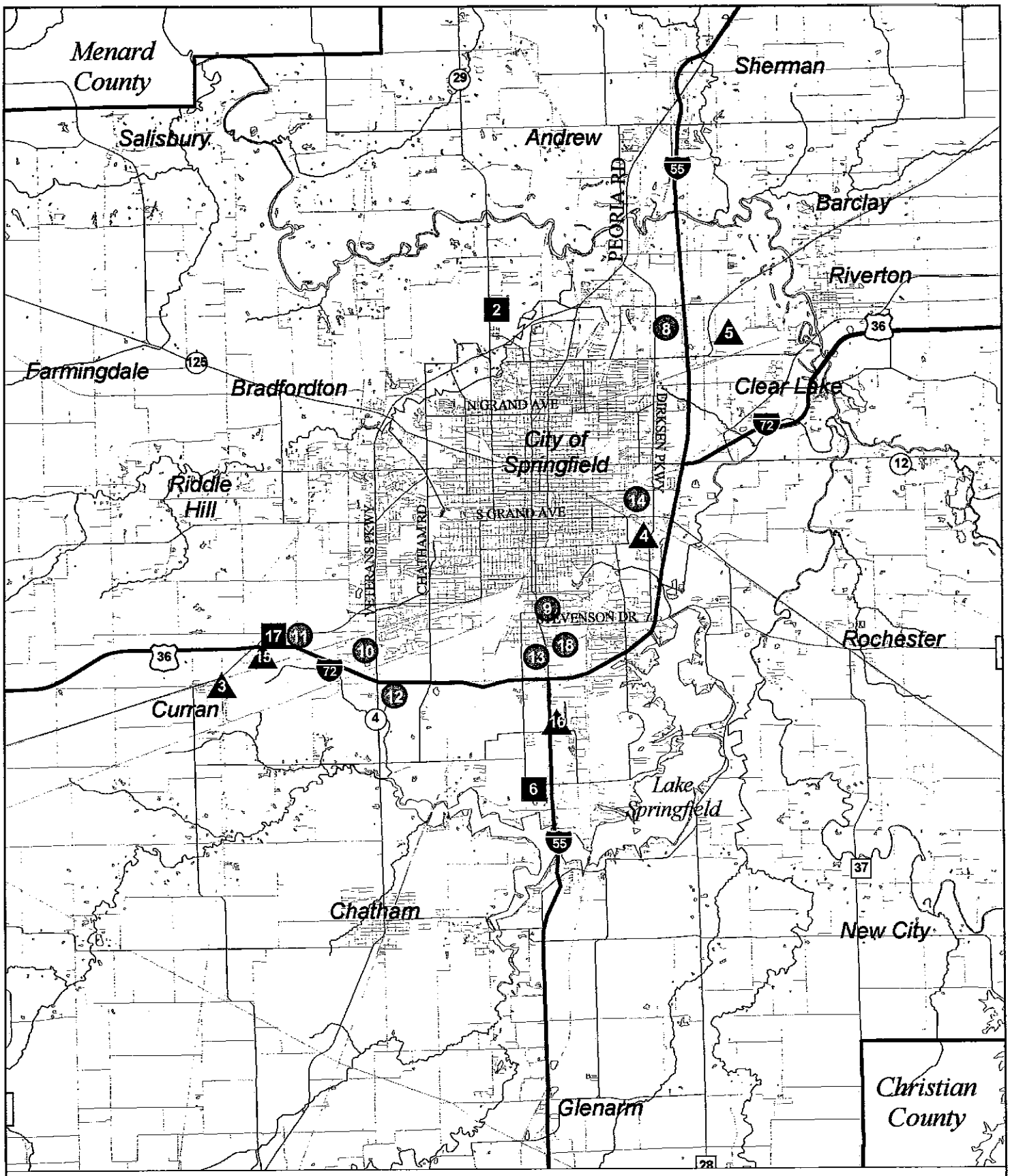
Available Commercial/Retail Sites and Light Industrial Office Parks

To illustrate the amount of land available for commercial and industrial development, we have summarized opportunities for development in the following table.

Currently, the Springfield metropolitan area has 19 developed commercial and industrial sites with 637 acres developed and 3,179 acre undeveloped. Most of these sites have excellent interstate or highway locations and have utilities and roadways in place.

Development Sites in City of Springfield and Sangamon County			
Industrial/Commercial	**Developed**	**Undeveloped**	**Total Acres**
Curran Site (3)	49	41	90
Interstate Industrial Park (5)	175	40	215
Southwest Business Park (15)	30	110	140
Springfield Industrial (16)	120	50	170
Dirksen Site (4)	5	48	53
Total	**379**	**289**	**668**
Retail/Commercial Sites			
Park South (9)	40	85	125
Parkway Pointe (10)	132	44	176
Pleasant Park (11)	30	15	45
Prarie Crossing (12)	0	147	147
66 Corporate Center (13)	11	3	14
Northfield Center* (8)	**25**	**40**	**65**
South Grand Point (14)	**20**	**72**	**92**
Wanless Sites (18)	0	2,000	2,000
Total	**258**	**2,406**	**2,664**
Potential Sites (currently vacant)			
Auburn Technical Site (1)	0	140	140
Capital Air Park (2)	0	30	30
Lake Area Business Park (6)	0	20	20
New Berlin Site* (7)	0	114	114
Wabash Market Place (17)	0	100	100
Williamsville Site (19)	0	80	80
Total	**0**	**484**	**484**
GRAND TOTAL ACRES	**637**	**3,179**	**3,816**

Source: Economic Development Council for Springfield and Sangamon County, December 1998.
Information verified by property representations.
*Property not verified by representative. #1, 7, & 19 are not mapped as the are outside primary study area



Industrial / Commercial / Retail Sites
Springfield, IL Area

▲ Industrial / Commercial
● Retail / Commercial
■ Potential Sites

DEVELOPMENT STRATEGIES
CONSULTANTS IN REAL ESTATE, COMMUNITY, AND ECONOMIC DEVELOPMENT

N

0 1 2 3 Miles

Note: Locations 1, 7, and 19 are not shown above as they are outside of the study area.
Source: Economic Development Council for Springfield and Sangamon County, December 1998

May 1999

APPENDIX

Census Tracts	TAZ	HOUSEHOLD TOTAL	INDUSTRIAL TOTAL	COMMERCIAL TOTAL	RETAIL TOTAL
1	1	0	105	182	0
1	2	0	-	-	0
1	3	0	-	182	0
1	4	77	-	-	0
1	5	77	-	-	0
1	6	0	-	-	0
Sub total 1		**154**	**105**	**363**	**0**
2	7	0	-	-	0
2	8	77	-	91	0
2	9	0	-	-	0
2	10	77	-	-	0
2	11	0	-	-	0
2	12	0	-	-	0
2	13	0	-	-	0
2	14	0	-	-	0
2	15	0	-	-	0
Subtotal 2		**154**	**-**	**91**	**0**
501	31	115	-	182	0
501	32	38	-	-	0
501	33	0	-	1,272	794
502	34	0	-	-	0
502	35	0	-	-	0
502	36	0	-	-	0
502	37	0	-	-	0
502	38	0	-	-	0
Subtotal 501		**154**	**-**	**1,453**	**794**
6	39	0	-	-	0
6	45	0	-	-	0
Subtotal 6		**0**	**-**	**-**	**0**
10	60	0	-	91	0
10	61	77	-	-	0
10	62	77	-	-	0
10	63	0	-	91	57
10	64	0	-	-	0
Subtotal 10		**155**	**-**	**182**	**57**
13	86	0	-	363	0
13	87	0	-	363	0
Subtotal 13		**0**	**-**	**727**	**0**
20	127	0	-	-	0
20	128	77	-	91	0
20	129	77	-	-	0
20	130	0	-	91	57
20	132	77	-	-	0
	133	0	-	91	57
20	134	0	-	-	0
20	135	0	-	-	0
20	136	77	-	182	227
Subtotal 20		**307**	**-**	**454**	**340**

Census Tracts	TAZ	HOUSEHOLD TOTAL	INDUSTRIAL TOTAL	COMMERCIAL TOTAL	RETAIL TOTAL
25	155	77	-	-	0
25	156	231	-	-	0
25	157	0	-	182	227
25	158	0	-	-	0
25	159	0	-	-	0
Subtotal 25		**307**	**-**	**182**	**227**
27	163	0	-	-	0
27	164	0	35	1,453	227
27	165	0	-	-	0
27	166	115	-	182	0
27	167	115	35	182	0
27	168	0	-	182	227
27	169	0	35	182	227
Subtotal 27		**231**	**105**	**2,180**	**680**
28	170	0	-	-	0
28	171	0	-	-	0
28	172	0	-	-	0
28	173	0	-	-	0
28	174	0	-	-	0
28	175	0	-	363	227
28	176	615	-	363	227
Subtotal 28		**615**	**-**	**727**	**454**
29	177	0	-	363	113
29	178	0	-	-	0
29	181	0	-	-	0
29	182	0	-	-	0
29	183	0	105	363	113
29	184	307	-	-	0
Subtotal 29		**307**	**105**	**727**	**227**
30	185	769	-	908	680
30	186	769	-	363	227
30	187	0	53	-	0
30	188	307	-	-	0
30	189	307	-	363	0
30	190	769	-	727	794
30	191	307	-	363	227
Subtotal 30		**3,229**	**53**	**2,725**	**1,928**
31	192	154	-	-	0
31	193	0	-	-	0
31	194	0	-	-	0
31	195	0	-	-	0
31	196	231	-	-	0
31	197	77	-	-	0
31	198	77	-	-	0
31	199	0	-	-	0
Subtotal 31		**538**	**-**	**-**	**0**

Census Tracts	TAZ	HOUSEHOLD TOTAL	INDUSTRIAL TOTAL	COMMERCIAL TOTAL	RETAIL TOTAL
32	200	307	-	-	0
32	201	0	-	-	0
32	215	307	-	908	113
32	216	307	-	908	794
32	217	307	-	182	0
32	218	307	-	-	0
32	231	307	-	-	0
32	232	307	-	363	113
Subtotal 32		**2,152**	**-**	**2,362**	**1,021**
Subtotal 33	**33000**	**461**	**-**	**182**	**113**
Subtotal 34	**34000**	**461**	**-**	**182**	**113**
Subtotal 35	**35000**	**615**	**-**	**182**	**113**
36	202	77	-	182	227
36	203	307	-	182	113
36	204	307	-	182	113
36	205	231	-	182	0
36	206	231	-	-	0
36	207	307	-	1,090	1,134
36	208	0	210	908	567
36	209	154	-	182	0
36	210	307	-	545	1,701
36	219	231	-	-	0
36	220	77	210	182	0
36	221	77	-	-	0
36	222	77	-	-	0
36	223	231	-	182	57
36	224	231	-	-	0
36	225	231	-	-	0
36	226	231	-	-	57
36	227	231	-	182	57
36	228	231	-	182	57
36	229	231	-	182	0
36	230	231	53	182	567
Subtotal 36		**4,228**	**473**	**4,542**	**4,649**
Subtotal 37	**37000**	**769**	**-**	**363**	**227**
38	233	38	-	-	0
38	234	307	105	-	0
38	235	307	105	-	0
Subtotal 38		**653**	**210**	**182**	**57**
39	211	231	-	182	113
39	212	231	-	182	113
39	213	231	-	-	0
39	214	231	-	-	0
Subtotal 39		**922**	**-**	**363**	**227**
Subtotal 40	**40000**	**307**		**-**	**113**
TOTAL		**16,720***	**1,050**	**18,167**	**11,339**

* Does not include loss of population in the inner core. Net new households from 2000 to 2030 is 15,400.

Opportunities and Constraints Future Housing Development by Traffic Analysis Zone Springfield, IL Area

- Projected Housing Growth Area
- Traffic Analysis Zone (TAZ) Boundary
- Urban TAZ Boundary
- 100-Year FEMA Flood Plain
- Wetland
- Corridor Study Area Boundary
- Current Sanitary Sewer District Boundary
- Future Sanitary Sewer District Boundary

Note: Projected growth areas are shown within the urban TAZ boundary only. Development outside urban TAZ area will be scattered and is not shown on map.

N

0 1 2 3 4 5 Miles

May 1999

DEVELOPMENT STRATEGIES

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Opportunities and Constraints Future Industrial Development by Traffic Analysis Zone Springfield, IL Area

- Projected Industrial Growth Area
- Traffic Analysis Zone (TAZ) Boundary
- Urban TAZ Boundary
- 100-Year FEMA Flood Plain
- Wetland
- Corridor Study Area Boundary
- Current Sanitary Sewer District Boundary
- Future Sanitary Sewer District Boundary

Note: Projected growth areas are shown within the urban TAZ boundary only. Development outside urban TAZ area will be scattered and is not shown on map.

N

0 1 2 3 4 5 Miles

May 1999

DEVELOPMENT STRATEGIES

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Opportunities and Constraints Future Commercial Development by Traffic Analysis Zone Springfield, IL Area

- Projected Commercial Growth Area
- Traffic Analysis Zone (TAZ) Boundary
- Urban TAZ Boundary
- 100-Year FEMA Flood Plain
- Wetland
- Corridor Study Area Boundary
- Current Sanitary Sewer District Boundary
- Future Sanitary Sewer District Boundary

Note: Projected growth areas are shown within the urban TAZ boundary only. Development outside urban TAZ area will be scattered and is not shown on map.

N

0 1 2 3 4 5 Miles

May 1999

DEVELOPMENT STRATEGIES
CONSULTANTS IN REAL ESTATE, COMMUNITY, AND ECONOMIC DEVELOPMENT

Opportunities and Constraints Future Retail Development by Traffic Analysis Zone Springfield, IL Area

- Projected Retail Growth Area
- Traffic Analysis Zone (TAZ) Boundary
- Urban TAZ Boundary
- 100-Year FEMA Flood Plain
- Wetland
- Corridor Study Area Boundary
- Current Sanitary Sewer District Boundary
- Future Sanitary Sewer District Boundary

Note: Projected growth areas are shown within the urban TAZ boundary only. Development outside urban TAZ area will be scattered and is not shown on map.

N

0 1 2 3 4 5 Miles

May 1999

DEVELOPMENT STRATEGIES

CONSULTANTS IN REAL ESTATE, COMMUNITY, AND ECONOMIC DEVELOPMENT

APPENDIX B

TRAFFIC STUDY

West Loop Roadway Feasibility Study

Traffic Study

Submitted to

Springfield Sangamon County Regional Planning Commission
Hanson Engineers

Table of Contents

List of Tables

List of Figures

Chapter I - Introduction

Study Objectives

The purpose of the West Loop Roadway feasible study is to improve access to developing and undeveloped land in the areas west and north of Springfield. Development in this area will cause traffic to overload existing facilities, most which are rural roadways designed for low volumes only. Proper planning of transportation corridors is necessary to procure necessary right-of-way before development makes it cost prohibitive.

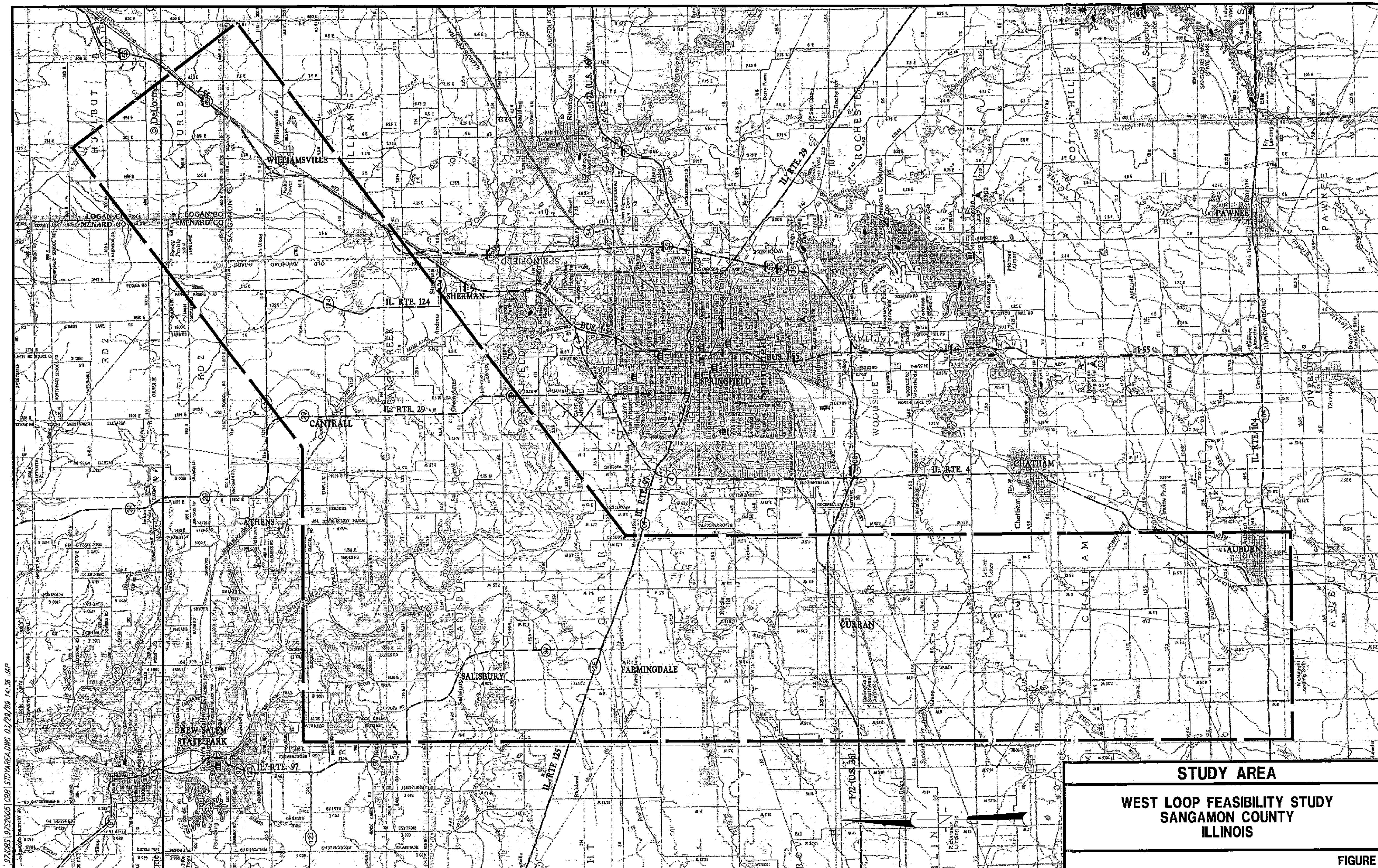
The purpose of this study is to outline the traffic analysis process including the existing traffic conditions and previous planning work, as well as a description of the Springfield regional transportation simulation model.

Study Area

Springfield, Illinois, the state capital, is located in Sangamon County, approximately in the middle of the state. Sangamon County had an estimated 1990 population of 178,386.

Springfield is the major city within the county, with a 1990 population of 105,227. Other cities adjacent to Springfield within the urbanized area include Jerome, Leland Grove, Grandview, and Southern View. The city of Chatham, to the southwest of Springfield, is not in the urban area but has been included in area-wide traffic analysis efforts. A study area map is shown in Figure 1.

Springfield is located along I-55, at the interchange with I-72/U.S. 36 and approximately 30 miles south of I-155 and 70 miles south of I-74. True growth in Springfield has been relatively low over the last 20 years, although the population density has gradually decreased as the demand for new housing has resulted in a fairly constant push to the southwest and west. Growth to the north is somewhat hampered by floodplains associated with the Sangamon River, while Lake Springfield and I-55 have checked growth to the southeast and east, respectively.



STUDY AREA

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

FIGURE 1

Chapter II - Existing Traffic Conditions

Demographic and Land Use Characteristics

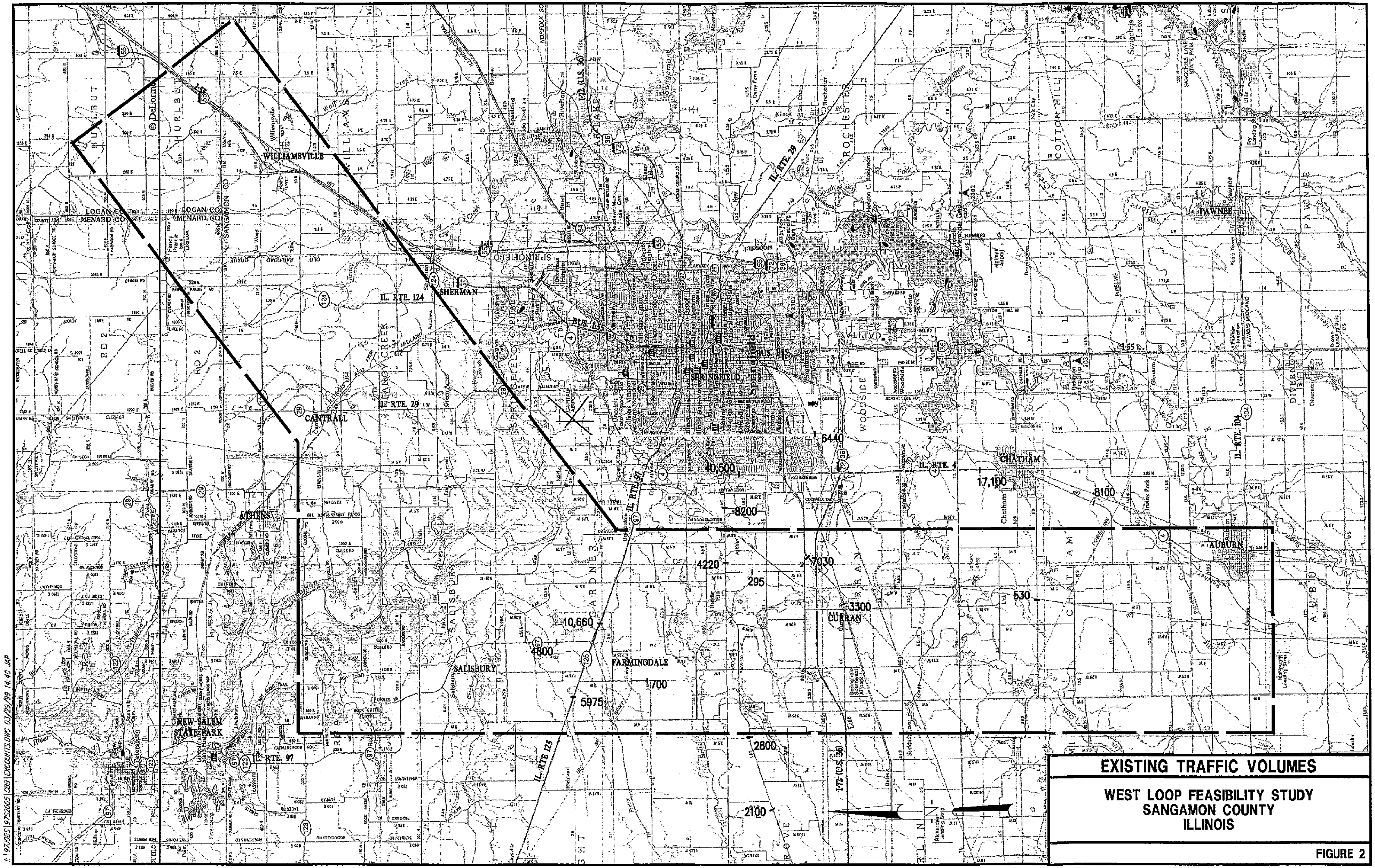
According to the U.S. Census Bureau, Sangamon County's growth is slowing from a growth rate of 9.1 percent between 1970 and 1980 to a growth rate of only 1.3 percent between 1980 and 1990. Most of the overall growth was captured by the City of Springfield, although some of the smaller villages also saw relatively large increases. A more detailed analysis of the demographics is included in the land use analysis section.

Existing Traffic Volumes

Existing traffic conditions in the study area were established using traffic count data collected by the Illinois Department of Transportation. Traffic volumes on key routes in the study area are listed in Table 1 below and are shown on Figure 2.

Table 1 Existing Traffic Volumes

Street	*Location*	*1998 Average Daily Traffic Volume**
Veteran's Parkway	South of Old Jacksonville Road	35,500
Veteran's Parkway	South of Wabash	32,300
IL 4	South of Woodside	17,000
IL 4	North of Chatham	14,900
Archer Elevator Road	South of Iles	2,500
Bradforton Road	North of Old Jacksonville Road	5,300
Lenhart Road	South of Old Jacksonville Road	650
South Lincoln Trail	South of IL 97	325
IL 97	North of IL 125	4,650
IL 125	West of IL 97	6,500
IL 97	East of IL 97	10,500
Old Jacksonville Road	West of Veteran's Parkway	15,000
Iles Road	West of Archer Elevator Road	600
I-72	East of Wabash	25,500
Woodside Road	East of Chatam	9,000
Walnut Street	West of IL 4	9,000
Rt 104	East of IL 4	6,500
Chatham Road	North of Woodside	6,600



EXISTING TRAFFIC VOLUMES

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

FIGURE 2

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Level-of-Service

A level-of-service (LOS) is a grading system whereby the quality of operation on a street system can be identified. LOS's range from an "A", the best traffic operation, to "F", the poorest. It is generally accepted that for urbanized areas, the minimum acceptable LOS is Level D.

Abbreviated definitions for each LOS are defined in Table 2 as follows:

Table 2 Level-of-Service Description

LOS	*Description*	*Traffic Loading % of Roadway Capacity*
A	Free flowing traffic	< 50 %
B	Low-density stable traffic	51% - 70%
C	Medium density stable traffic flow	71%-80%
D	High density stable traffic flow	81%-90%
E	Unstable flow at or near capacity levels	91%-100%
F	Breakdown of traffic flow	> 100%

Table 3 below shows a speed-capacity table for various roadway types. This table was used to determine the LOS for roadways in this study, based on a ratio of the volume during peak hour to total capacity (V/C) and utilizing the definition of LOS in Table 2 above.

For example, Table 3 shows a collector road in the suburb as having a capacity of 500 vehicles per hour per lane. A collector road in a suburb carrying 8,000 vehicles (two-way) a day was assumed to carry 800 vehicles in the peak hour (10 percent). It would have a V/C of 0.80, (800/(500 *2)) a LOS of C/D. The existing LOS for several of the selected routes in the study area, based the LOS description in Table 2 is presented in Table 4 below.

Table 3 Speed-Capacity* Table

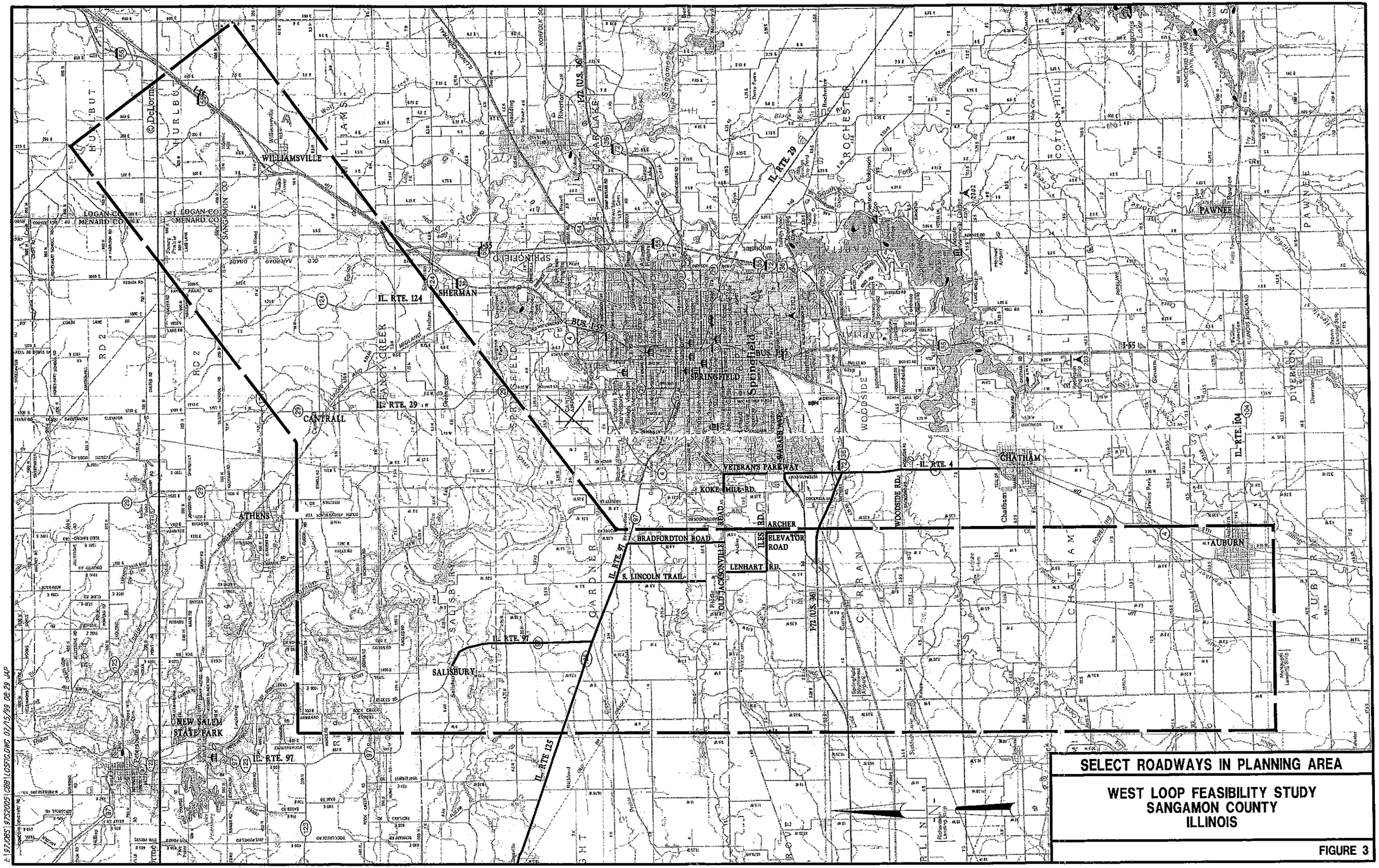
Area Type	Facility Type			
	State Highway (w/turn-bays) 1	**Major Arterial 2**	**Minor Arterial 3**	**Collector 4**
Central Business District	700	600	500	450
	35 (mph)	30	30	25
Urban	800	800	550	450
	35	35	30	30
Suburban	900	800	600	500
	45	40	35	30
Rural	900	800	600	500
	55	45	45	45

* vehicles per hour per lane

Table 4 Existing LOS for Select Roadways in Planning Area Using 1998 ADT

Roadway	From	To	LOS
Veteran's Parkway	Old Jacksonville Road	Iles	F
Veteran's Parkway	Wabash	I-72	D
IL 4	Woodside	Chatham	A
Wabash	Veteran's Parkway	Koke Mills Road	B
Archer Elevator Road	Iles	Wabash	A
Bradforton Road	IL 97	Old Jacksonville Road	B
Lenhart Road	Old Jacksonville Road	Iles	A
South Lincoln Trail	IL 97	Old Salem	A
IL 97	Salisbury	IL 125	A
IL 125	Pleasant Plains	IL 97	A
IL 97	IL 97	Bradforton Road	B
Old Jacksonville Road	Koke Mill Road	Veteran's Parkway	B
Iles Road	Lenhart	Archer Elevator	A
I-72	Wabash	Veteran's Parkway	A
Chatham Road	I-72	Woodside	A

The selected roadways in Table 4 were chosen to give a representative condition of the roadway system in the study area. Figure 3 shows each location.



SELECT ROADWAYS IN PLANNING AREA

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

FIGURE 3

A:\97J085\97J2005\CBI\LOSFIG.DWG 07/15/99 08:29 JAP

Chapter III – Transportation Demand Modeling

The purpose of this chapter is to describe the process taken to prepare the Springfield Metropolitan Area travel demand model. The purpose of developing such a model is to set up a computerized mathematical process for use in estimating travel movements within the metropolitan area. The first step in developing a travel model is to build and refine the model until it accurately reflects current transportation conditions. This process is called network development and calibration. After this is done, the model can be used to predict future year traffic flows based upon anticipated changes in land use and development.

The model development process involves the following steps:

- Updating socio-economic data;
- Creating a computerized street network;
- Developing trip generation equations and estimating the number of trips generated;
- Distributing the trips between transportation analysis zones (TAZs); and
- Assigning the trips to the transportation network.

At its simplest level, a network is a computerized representation of the street system. As such, it can be analyzed by the computer in order to study the effects of certain variables, to plan changes in the existing street system, or to forecast new patterns if the system is upgraded or modified.

The street network is comprised of intersections which are represented in the computer model as nodes, and street segments which are represented in the computer model as links. The information required for each link includes:

- Distance;
- Speed;
- Functional classification;
- Area type;
- Number of lanes; and
- Capacity

A transportation network is used to compute travel time and distances which in part determines the amount of travel on a particular route. Input to the travel model, as developed from networks, is represented in terms of travel impedance's between zones. The impedance's are then used in trip assignment process in which trips from each zone are assigned to the street network. The assignment is based on three factors, the logical shortest paths between origin and destination, the accumulation of vehicle trips on each link, and the computation of congestion reflected in vehicle speed. A computerized network of the existing street system in the Springfield Metropolitan Area was built using TranPlan, a travel demand model software program. The network includes most routes within the study area classified as collector or higher by the federal functional classification system.

The 1991 base network was developed by SATS for the Springfield Transportation Plan. The Tranplan model consists of 235 Traffic Analysis Zones (TAZs) and 15 external stations.

Trip Generation

Trip generation determines how many trips are produced in, or attracted to, each transportation analysis zone. These productions and attractions are calculated by multiplying applicable socio-economic data by trip generation equations. A major task in the trip generation modeling phase is determining and estimating appropriate trip generation equations. IDOTs modeling consultant for the SATS network completed this work.

Traffic Distribution Procedures

A 1991 base year trip table was built by IDOT's consultant. A trip table is the compilation of trips from each zone to each other zone. The gravity model is based on the premise that trips produced in any given area will distribute themselves in accordance with the accessibility of other areas and the level of activity they offer. In general terms, trips between zones are affected by distance and cost and by the size or attractiveness of the destination.

The gravity model is adjusted to each urban area by specifying travel time factors. These factors represent the attractiveness of a trip length in one-minute increments.

The travel impedance or cost is comprised of distinct elements. One is terminal time. Terminal time is the time in minutes required to park and/or walk to complete a trip. Terminal times for each zone in the study area were estimated based upon land use type and density. Travel impedance also includes the time it takes to travel on the street network itself to reach a destination.

External Trips

There are three types of external trips. Internal-external (I-X) trips begin in and end outside the area. The opposite is true for (X-I) trips. External to external trips (X-X) are through trips which pass through the study area without stopping.

Traffic Assignment

The purpose of completing the numerous steps previously described is to have a model that can accurately produce traffic volume estimates. A traffic assignment is completed by connecting the trip table with the transportation network. The assigned traffic flows on the links is the result of traffic assignment.

Analysis of the initial assignment revealed the need to review or "calibrate" the model inputs. Calibration is the procedure used to estimate the parameters of a model or to adjust a model to replicate actually measured conditions. The inputs reviewed included trip generation, travel time factors, vehicle occupancy factors, and network travel speeds.

Baseline Traffic Conditions

The calibrated traffic model provides a baseline from which to examine future traffic impacts. Current traffic congestion levels can be indicated on the base year model. The level of current congestion can be compared with future year forecasts to determine what congestion is a result of existing problems or by projected growth. While there are precise measures of roadway volume-capacity relationships, determining when a roadway is considered congested can also involve subjective criteria.

Level-of-service (LOS) standards relate to measuring the performance of the transportation system and establishing criteria which determines whether a particular element of the system is functioning within acceptable parameters. Determining what is acceptable is typically based upon local or state policies. A description of LOS is provided in Chapter Two of this study.

Long Range Plan Network

The existing or 1991 base year street network was updated to include completed or planned street improvement projects included in the SATS Long Range Transportation Plan. This process included updating the capacity and classification of reconstructed streets and the addition of new roadways into the street network. In addition, an updated future land use plan with land use projections for housing, commercial, office and industrial land uses was provided by Development Strategies Incorporated for inclusion into the model. Significant growth for each category was assigned to traffic analysis zones (TAZ) in the study area, as well as other TAZs in the regional model. 1998 traffic volumes were used as the basis for calibration of the future network during post-processing.

The projects which impact travel flows the most are new street projects or street widening projects. Long range projects that have been identified and are applicable in the West Loop area include the following projects. This list is not inclusive of all the projects included in SATS Long Range Plan, although all projects were included in the analysis.

Table 5 SATS Long Range Plan Selected Street and Highway Projects

Project	Location	Type of Improvement
Koke Mill	Jefferson to Old Jacksonville	Reconstruct, Add 2 Lanes
Greenbriar	Koke Mill to Providence	New Construction
Greenbriar	CN&W to Lenhart	New Construction
Laurel/Greenbriar	Laurel/Greenbriar	Connection
Iles	Archer Elevator to Lenhart	New Construct/Add 2 Lanes
Lenhart	Old Jacksonville to Bunker Hill	Reconstruct, Add 2 Lanes
Meadowbrook	Washington to Old Jacksonville	Reconstruct, Add 2 Lanes
Archer Elevator	Old Jacksonville to Wabash	Recon, Add 2 Lanes
Hedley	Happy Landing to Haggard	New Construction
Hedley	Archer Elevator to Lenhart	New Construction
Cockrell	Wabash to Foxhall	Reconstruct, Add Lanes, Grade Separate at RR
Cockrell	Foxhall to Spaulding Orchard	Reconstruct, Add Lanes
MacArthur	Wabash to Woodside Road	New Construction, I-72 interchange
Recreation Drive	Conestoga to MacArthur Ext	New Construction
Mathers Road	Veterans to Curran	New Construction
Cockrell Lane/ Wagon Ford Road Connector	Cockrell Lane/ Wagon Ford Road	New Construction
Wagon Ford Road Ext	Spaulding Orchard to Wabash	New Construction
Southwind	Cotton Hill to 11th Street	New Construction
Southwind	Veterans east to Walnut	New Construction
Chatham Road	Westchester to I-72	Add 2 Lanes
Chatham Road	I-72	Reconstruct Bridge
Old Chatham Road	I-72 to Woodside	Add 2 Lanes
Bradfordton road	IL 97 to Wabash	New Construction/Widen
Bradford Lane	Old Jacksonville to Old Salem	Reconstruct
Old Jacksonville Road	Koke Mill to Lenhart	Add 2 Lanes
Woodside Road	Veterans to North Lake Road	Add 3 Lanes
Old Salem Lane	Bradfordton to Old Covered Bridge Road	Reconstruct
Wabash	Koke Mill to I-72	Add 3 Lanes
Jefferson (IL 97/125)	Veterans to IL 97/125 Junction	New Construction
IL 29	Capital Airport to Camp Sangamo Road	Add 2 Lanes
Veterans	Old Jancksonville Road to Iles	Add 2 Lanes
Veterans	Chatham to Iles	Add 2 Lanes
Lincolnshire Extension	Freedom Drive to 11th Street	New Construction

The results of the traffic analyses of the long range plan network indicate that the new projects listed on the 20 year plan will go a long way to addressing congestion levels associated with future growth under the 30 year growth scenario. However, if no new projects other than the long range plan network are constructed, the existing levels of at key locations will decrease.

Table 6 below shows the projected LOS of the Select Roadways under the long range plan network:

Table 6 Projected LOS for Select Roadways in Planning Area for Long Range Plan Network

Roadway	From	To	LOS
Veteran's Parkway	Old Jacksonville Road	Iles	E/F
Veteran's Parkway	Wabash	I-72	D
IL 4	Woodside	Chatham	B
Wabash	Veteran's Parkway	Koke Mills Road	C
Archer Elevator Road	Iles	Wabash	B
Bradforton Road	IL 97	Old Jacksonville Road	C
Lenhart Road	Old Jacksonville Road	Iles	A
South Lincoln Trail/ Old Covered Bridge Lane	IL 97	Old Salem	A
IL 97	Salisbury	IL 125	B
IL 125	Pleasant Plains	IL 97	D
IL 97	IL 97	Bradforton Road	B
Old Jacksonville Road	Koke Mill Road	Veteran's Parkway	F
Iles Road	Lenhart	Archer Elevator	A
I-72	Wabash	Veteran's Parkway	C
Chatham Road	I-72	Woodside	D/E

As can be seen from the table, key roadways including Veteran's Parkway, Old Jacksonville Road, and Chatham Road will be heavily congested under the 2020 street network with 2030 traffic. To determine if the completion of a West Loop Road would have a measurable effect in addressing this traffic congestion, three West Loop alternatives were analyzed. The results of this analysis are included in Chapter I

Chapter IV – Roadway Alternatives

To determine whether or not the completion of a West Loop roadway would address future traffic growth, as well as reduce existing and projected congestion, three roadway alternatives were analyzed. A description of each of these roadway alternatives is provided below:

Freeway Alternative

The freeway alternative includes an access controlled roadway that runs from Rt 104 north to Old Jacksonville Road, were it jogs west before continuing north through Salisbury, then cutting diagonal across the Sangamon County Conservation Area, intersecting Rt. 29 just south of SR 124.

Interchanges would be located at the following locations:

- Rt 104
- Chatham Road
- I-72
- Old Jacksonville Road
- Rt125
- IL 97
- Rt 29
- I-55

Expressway Alternative

The expressway alternative includes a limited access roadway that runs from Rt 104 north along Curran Road. It jogs right south of Wabash, crossing I-72 between Curran Road and Bunker Hill and continuing north to Cross IL 125 at IL 97. It would continue along IL 97 to the north, veering east just south of Salisbury to connect with Andrew Road. It would run along Andrew Road east to I-55. Interchanges would be located at I-72 and I-55, and possibly at Rt. 125 and Rt. 97.

Arterial Alternative

The arterial alternative includes improvements to several roadways in the West Loop area. Many of the roadways identified are already on the SATS Long Range Plan. The most significant additions would be an improved connection from south of Salisbury on Rt. 97 east to Cantrall Creek Road and a new arterial from Rt. 97 at Rt. 125 south to CH 40 (East Loami Road). The remaining roadways represent a continuation of the existing grid pattern in the West Loop area. This alternative also included an improvement to the Rt. 4/Veterans Parkway and Rt. 97/Jefferson Street intersection (Grade Separation).

Freeway Alternative Analysis

Analysis of the freeway alternative revealed that projected traffic volumes would range from a projected low of 5,700 ADT along the southern portion of the route to a high of 12,500 ADT in the segment from I-72 north to Rt. 125. East of Rt. 29, the freeway was projected to carry almost 11,000 ADT, while the north segment was projected to carry 8,000 ADT. Selected ADT traffic volumes are shown on Figure 4.

Travel times on the freeway alternative were the best of all three alternatives. However, the usage of the freeway was limited primarily due to the following reasons:

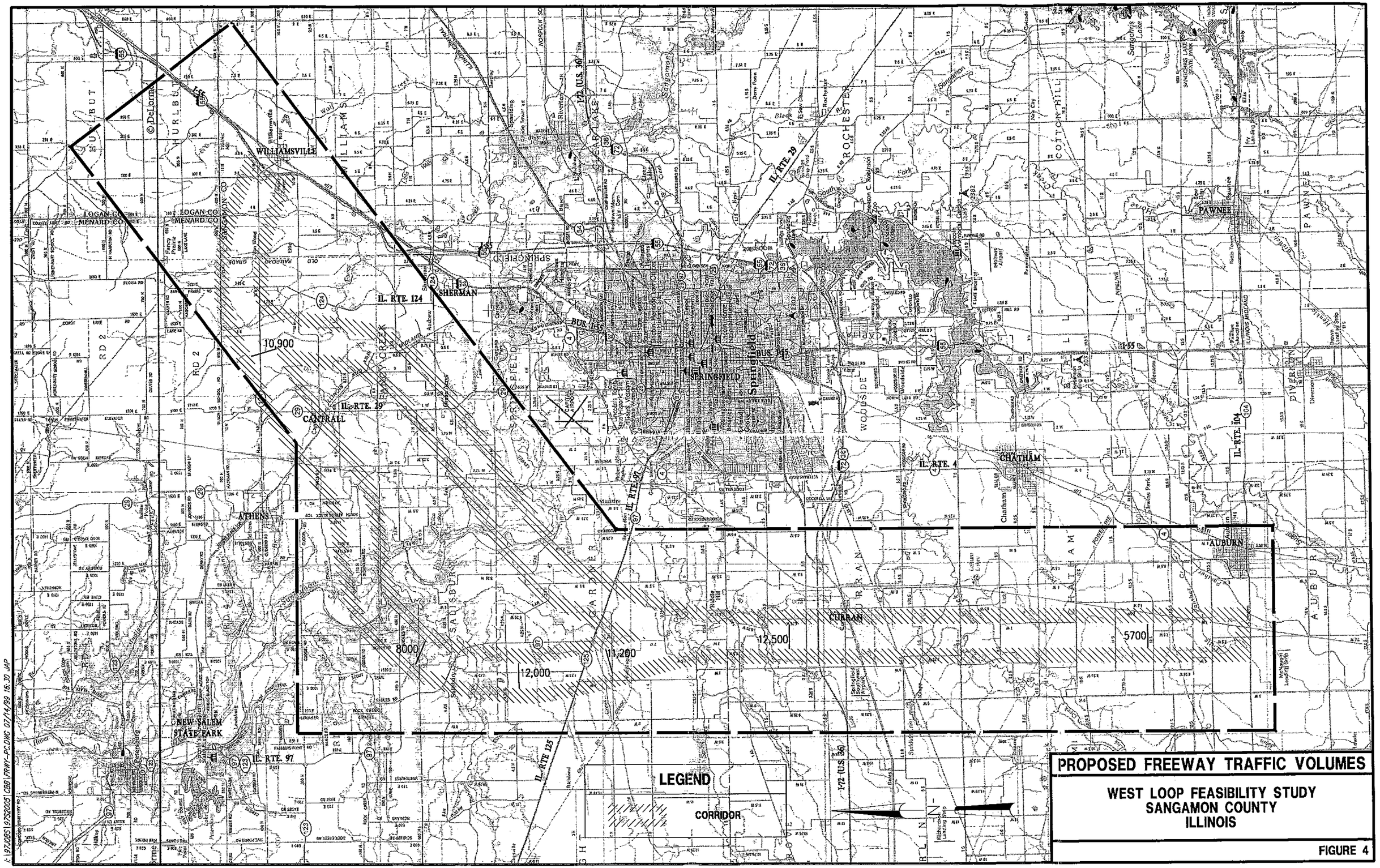
- While residential growth continued in the western area of Springfield, it primarily remained inside the ring created by the freeway alternative. Most new commercial growth in the area immediately adjacent to the freeway was neighborhood or service related. Major retail sites remained centered along the Veteran's Highway Corridor, extending south along Rt. 4.

- Office development remained in the Downtown area and along Veteran's Parkway. Additional office development and industrial growth was assumed along the I-72 Corridor. However, for most area trips, the new freeway did not provide significant travel timesavings over existing routes and the improved roadways included in the SATS 1995 Transportation Plan. Some trips from the new development areas were projected to access the Freeway via Old Jacksonville Road, south to I-72.

- The freeway provides absolutely no travel timesavings for through trips through the metropolitan area. I-55 runs north to northeast through Springfield, and the loop road, being on the west side, would require a significantly longer trip (distance and time). Extending the freeway south to I-55 would reduce the travel time but not enough to justify the trip. The future network did include the additional capacity (3 lanes) on I-55, but it appears than even with the 2 lane sections, there would be few trips diverted. Only the addition of a major destination (i.e. new regional mall) directly on the new freeway would attract any significant amount of trips.

- The number of access points is limited, especially in the area south of I-72, which reduces the likelihood of low trip length trips using the freeway system (i.e. getting on, then off at the next exit, etc.)

The section of the freeway south of I-72 was projected to carry the least amount of traffic, less than 6,000 ADT. This traffic was attracted from the Loami area and some traffic was attracted from Rt. 4, which despite improvements is project to remain congested in the future year. A small amount of traffic was also attracted from I-55 destined for the northwest corner of the metropolitan area.



PROPOSED FREEWAY TRAFFIC VOLUMES

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

FIGURE 4

The LOS for the freeway was projected to be very good, LOS A for most segments. The impact of the freeway on select roadways in the planning area are shown in Table 7 below. It was noted that although the projected LOS of Veteran's Parkway was still poor, the freeway did divert some trips from the Salisbury area off of Veteran's Parkway (up to 2,000 ADT).

Table 7 LOS for Select Roadways in Planning Area for Freeway Alternative

Roadway	From	To	LOS
West Loop Freeway	Rt. 104	I-72	A
West Loop Freeway	I-72	IL 125	A
West Loop Freeway	IL 125	IL 29	A
West Loop Freeway	IL 29	I-55	A
Veteran's Parkway	Old Jacksonville Road	Iles	E
Veteran's Parkway	Wabash	I-72	D
IL 4	Woodside	Chatham	B
Wabash	Veteran's Parkway	Koke Mills Road	C
Archer Elevator Road	Iles	Wabash	A
Bradforton Road	IL 97	Old Jacksonville Road	B
Lenhart Road	Old Jacksonville Road	Iles	A
South Lincoln Trail/ Old Covered Bridge Lane	IL 97	Old Salem	A
IL 97	Salisbury	IL 125	A
IL 125	Pleasant Plains	IL 97	D
IL 97	IL 97	Bradforton Road	A/B
Old Jacksonville Road	Koke Mill Road	Veteran's Parkway	F
Iles Road	Lenhart	Archer Elevator	A
I-72	Wabash	Veteran's Parkway	C
Chatham Road	I-72	Woodside	B/C

Expressway Alternative Analysis

Analysis of the expressway alternative revealed that projected traffic volumes would range from a projected low of 5,700 ADT along the southern portion of the route to 11,000-14,000 ADT east of Rt. 29. The segment from I-72 north to IL 125 was projected to carry 13,500 ADT. Selected ADT traffic volumes are shown on Figure 5.

The analysis revealed that, despite the reduction in travel time associated with an expressway alternative compared to a freeway alternative, the projected volumes for the expressway was very close to that of the freeway alternative, and in the area south of I-72 and the Salisbury area, it exceeded the projected traffic of the freeway alternative. The reasons for this include the following:

- Projected through trips on the freeway alternative appear to be low – most trips only utilized a portion of the route for their trip. The greatest travel timesavings are incurred when a majority of the trip in on the freeway/expressway. In other words, since most of the trip

lengths associated with trips utilizing the freeway or expressway have a major portion of their trip on the east-west connectors or other routes, the actual difference in travel time on the freeway/expressway is only a small, negligible portion of their trip.

- The expressway is also projected to operate at a low congestion level, keeping travel times low.

- The expressway allows for more access points, thereby allowing more trips of shorter lengths.

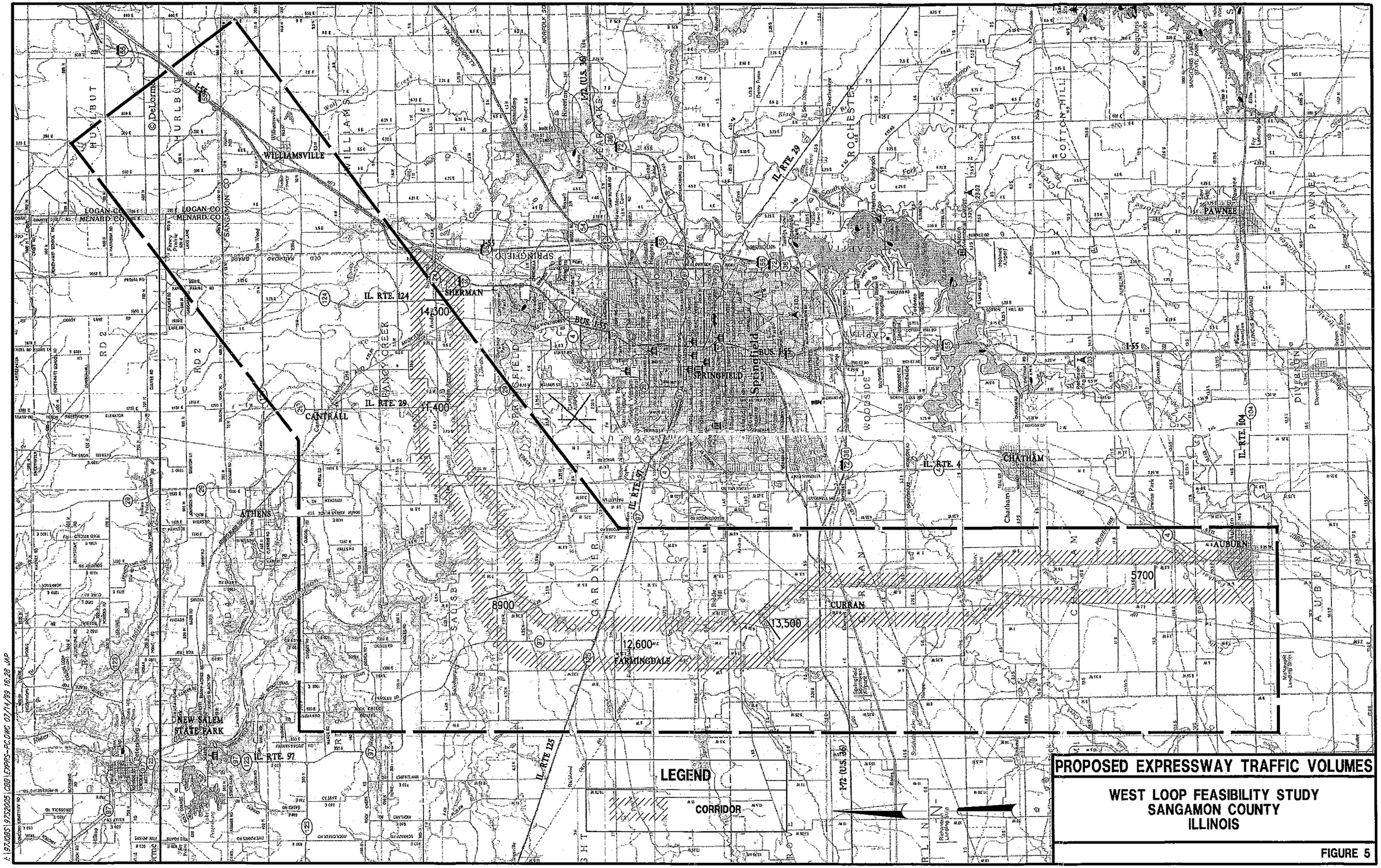
- The expressway is closer in to the metropolitan area, as much as a mile in some areas, allowing more growth to occur west of the roadway, and thus, be more likely to use the road.

- The expressway replaces some local roads including Curran and IL 97 to Salisbury, thereby capturing the existing and projected trips.

The LOS for the expressway was projected to be very good, LOS A/B for most segments. The impact of the expressway on select roadways in the planning area are shown in Table 7 below. It was noted that although the projected LOS of Veteran's Parkway was still poor, the expressway did divert some trips from the Salisbury area off of Veteran's Parkway (up to 1,500 ADT).

Table 8 LOS for Select Roadways in Planning Area for Expressway Alternative

Roadway	From	To	LOS
West Loop Expressway	Rt. 104	I-72	A
West Loop Expressway	I-72	IL 125	A
West Loop Expressway	IL 125	IL 29	A
West Loop Expressway	IL 29	I-55	A
Veteran's Parkway	Old Jacksonville Road	Iles	E
Veteran's Parkway	Wabash	I-72	D
IL 4	Woodside	Chatham	B
Wabash	Veteran's Parkway	Koke Mills Road	C
Archer Elevator Road	Iles	Wabash	A
Bradforton Road	IL 97	Old Jacksonville Road	B
Lenhart Road	Old Jacksonville Road	Iles	A
South Lincoln Trail/ Old Covered Bridge Lane	IL 97	Old Salem	A
IL 125	Pleasant Plains	IL 97	D
IL 97	IL 97	Bradforton Road	B
Old Jacksonville Road	Koke Mill Road	Veteran's Parkway	F
Iles Road	Lenhart	Archer Elevator	A
I-72	Wabash	Veteran's Parkway	C
Chatham Road	I-72	Woodside	B



PROPOSED EXPRESSWAY TRAFFIC VOLUMES

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

FIGURE 5

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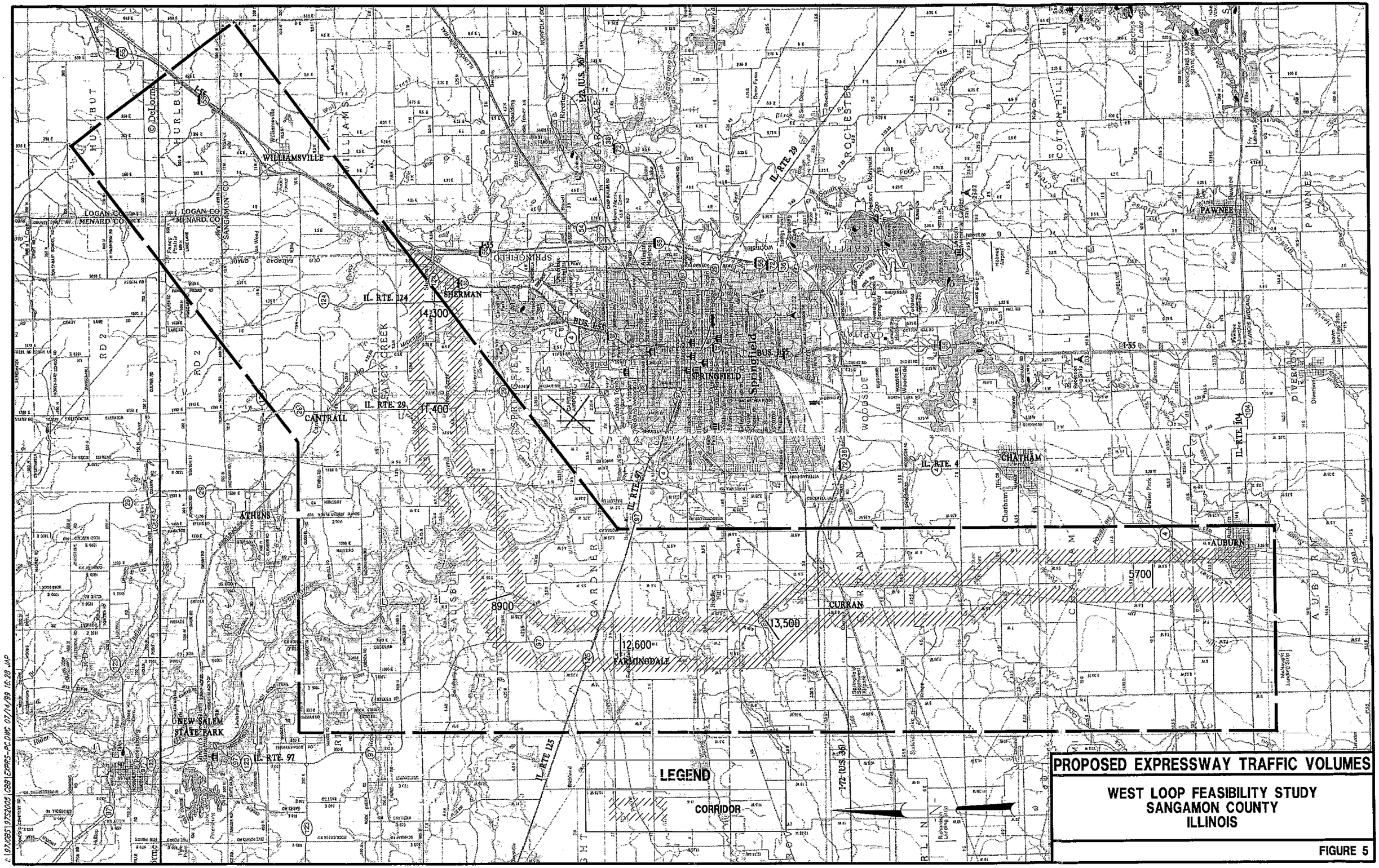

PROPOSED EXPRESSWAY TRAFFIC VOLUMES

WEST LOOP FEASIBILITY STUDY
SANGAMON COUNTY
ILLINOIS

FIGURE 5

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Arterial Alternative Analysis

The arterial alternative included the projects in the SATS 1995 Transportation Plan and also included four other key roadways:

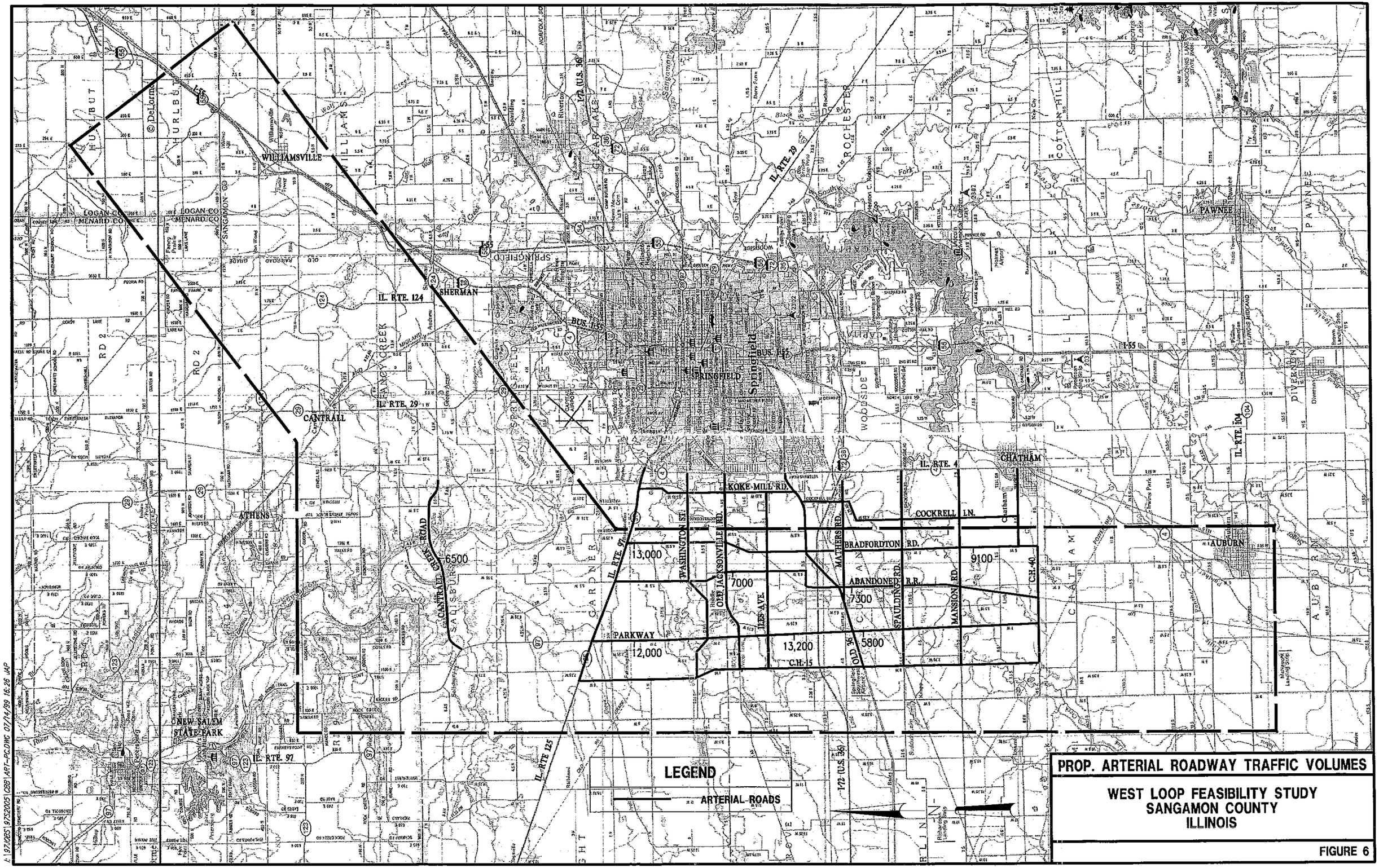
- Improved connection between IL 97 at Salisbury and Andrew Road;
- Arterial roadway between IL 125/IL97 and CH 40 (East Loami Road); and
- Improvement / Extension of Mansion Road and Spaulding Orchard Road from IL 4 to CH 15.

Analysis of the arterial alternative included revealed that projected traffic volumes would range from approximately 6,000 ADT to 13,000 ADT. These roadways are projected to operate at a good level of service, although the impact of the roadways on relieving congestion at other locations is less that the expressway alternative. The segment of roadway between IL 125/IL 97 and I-72 is projected to carry sufficient traffic where an improved segment (expressway or hybrid arterial/expressway) cross-section might be considered. Selected ADT traffic volumes are shown on Figure 6.

The projected LOS for each Roadway and its impact on the surrounding street system is shown in Table 9 below:

Table 9 LOS for Select Roadways in Planning Area for Arterial Alternative

Roadway	From	To	LOS
Salisbury/Andrew Connector	Salisbury	Andrew	A
Arterial	IL 125/IL 97	I-72	A
Arterial	I-72	CR5A	A
Arterial (Curran/Wesley Chapel)	IL 4	I-72	A
Arterial (Breaddus/Stables)	Curran/Wesley Chappel	I-72	A
Veteran's Parkway	Old Jacksonville Road	Iles	E
Veteran's Parkway	Wabash	I-72	D
IL 4	Woodside	Chatham	B
Wabash	Veteran's Parkway	Koke Mills Road	C
Archer Elevator Road	Iles	Wabash	A
Bradforton Road	IL 97	Old Jacksonville Road	B
Lenhart Road	Old Jacksonville Road	Iles	A
South Lincoln Trail/ Old Covered Bridge Lane	IL 97	Old Salem	A
IL 97	Salisbury	IL 125	D
IL 125	Pleasant Plains	IL 97	D
IL 97	IL 97	Bradforton Road	B
Old Jacksonville Road	Koke Mill Road	Veteran's Parkway	F
Iles Road	Lenhart	Archer Elevator	A
I-72	Wabash	Veteran's Parkway	C



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Conclusions/Recommendations

After a careful review of the various alternatives from a traffic perspective, it appears that a combination of the expressway alternative with the arterial alternative provides the best level of traffic improvements in this area of the metropolitan area.

The following recommendations are made in regards to the alternatives reviewed:

- Improve to a 2/3 lane configuration and extend the Cantrall Creek Road connection in the Salisbury area from west of IL 29 at Andrew Road to IL 97. Design standards should address the environment sensitivity of this area, as well as the projected traffic.

- Improve IL 97 from IL 97/IL125 south to I-72 as a combination arterial/parkway with a 4/5 lane configuration. Access should be limited to as few locations as possible. Individual property access locations should be discouraged. In addition to an interchange with I-72, an additional interchange with SR 125/SR 97 may be considered.

- South of I-72, extend the parkway alignment to CH 40, but consider a 4/5 lane arterial cross section only in the general vicinity of I-72/Wabash and CH 40. The section in-between should be considered for a 3-lane cross-section, and should be located between Curran Road and CH 15/Farmingdale Road.

It should be noted that in the course of this analysis, it became apparent that the metropolitan area transportation problems in this area are related to east west movements. No major east-west corridor between Jefferson and Wabash exists, especially one that connects to I-55. Traffic on Veteran's Parkway could be mitigated with such a connection – Ideally it would be an extension of Old Jacksonville Road from the west to I-55, as a five lane arterial.

It should also be noted that, although not part of the study, the MacArthur extension appears to have a significant impact on improving traffic conditions on Veteran's Parkway, essentially becoming IL 29 to the south. The improvement of this roadway to the Chatham area will contribute to a mitigation of IL 4 congestion. Further improvements on improving Veteran's Parkway travel conditions will have to focus on access control and cross access agreements given the concentration of commerce there.

Finally, it is recommended that sufficient right-of-way to allow for widening of all three lane arterials (not collectors) to five lanes be acquired.